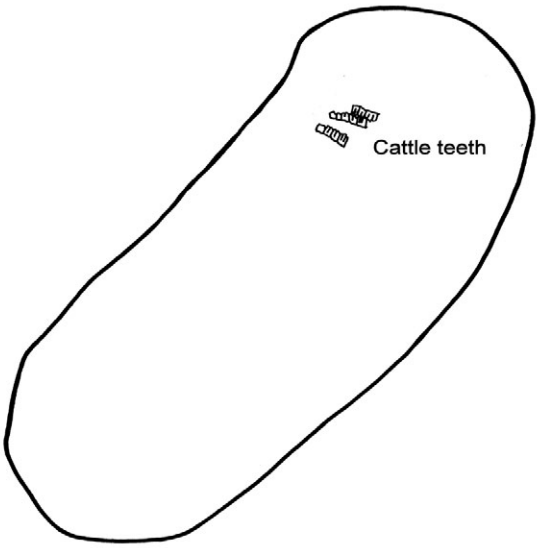

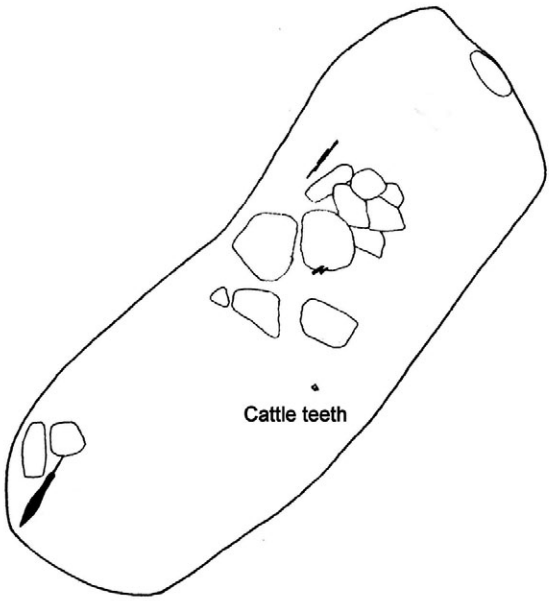

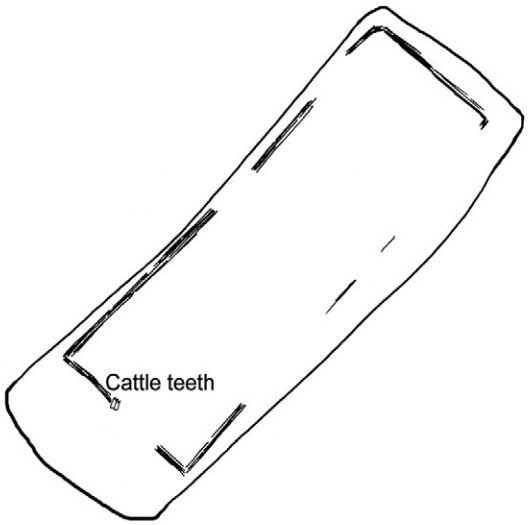

Cattle Teeth in Graves

Interpretations of animal bones found in Finnish inhumation graves (ca AD 550-1700)

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Tiivistelmä Referat – Abstract

Hautauksen luonne on aina rituaalinen. Tämä seikka on usein unohdettu suomalaisissa ruumishautauksissa, joista löytyy eläinluita. Vain vainajan yhteydestä löytyneille eläintenluille on pohdittu rituaalisia merkityksiä. Haudan täytemaasta, joka on osa hautausta, löytyneet eläintenluut on aikaisemmassa tutkimuksessa jätetty usein huomioimatta.

Tässä opinnäytteessä pohditaan eläinluiden funktiota ja tulkintamalleja hautauksissa. Lähtökohtana on kuusi eriaikaista kohdetta. Myöhäiseen rautakauteen (ja mahdollisesti keskiaikaan) sijoittuva Euran Luistarin kohde sijaitsee länsirannikolla ja keskiaikainen kyläkalmisto Finno sijaitsee Espoossa, etelärannikolla. Lisäksi aineistossa on kaksi kaupunkikohdetta Turku ja Porvoo, joista Turusta tutkittava kalmisto ajoittuu myöhäiskeskiaikaan ja uuden ajan taitteeseen ja Porvoo 1700-luvulle. Itä-Suomesta mukana on rautakauden loppuun ajoitettu Visulahden kalmisto Mikkelissä ja nykyisin Venäjän puolella sijaitseva Käkisalmen Suotniemen hautapaikka. Kohteiden eläinluut on aiemmin tutkittu tai opinnäytteen puitteissa analysoitu. Luita on verrattu kohteiden hautakonteksteihin, mikäli mahdollista.

Vertailun perusteella on päädytty tulkintamalleihin, jotka voivat selittää eläinten olemassaolon hautauksissa. Näitä ovat muun muassa hautauhrit, muisteluateriat ja eläinhautaukset. Hautapaikka on saattanut olla aiemmin esimerkiksi asuinpaikka, jolloin haudoista löytyneet luut voivat liittyä alueen käyttöön asuinpaikkana. Kohteiden ajallisessa vertailussa kaupunkikohteet ovat myöhäisimmältä ajalta ja löydöt liittyvät ilmeisesti lähinnä aiempaan tai samanaikaiseen asutustoimintaan. Muiden kohteiden välillä ei ajallisesti näytä olevan selkeää eroa löytöaineistossa. Tämän lisäksi Itä-Suomen ja Länsi-Suomen välillä ei aineiston perusteella huomattu eroavaisuutta hautaustavoissa. Toisaalta ainakin Finnon kylätontilta löytyi piirteitä, jotka viittaavat itäiseen hautaperinteeseen.

Tulkintamalleissa on otettu huomioon kyseisten aikakausien uskomuksiin liittyvät piirteet, mikäli ne ovat tulkintamallien kannalta oleellisia, sekä luiden säilyvyyteen liittyvä problematiikka. Arkeologisen luun säilyvyyden kannalta maaperä asettaa omat haasteet. Eläimistä (ja ihmisistä) on usein säilynyt vaan luuston kovin aines eli hampaat. Tämän takia oleellisessa osassa tutkimuksen kannalta on arkeologisten kaivausten dokumentoinnin laatu. Eläinluiden tarkka dokumentointi hautakonteksteissa ja suhteessa ympäröivään maahan on keskeistä laadukkaiden tulkintojen kehittelyssä.

Avainsanat – Nyckelord – Keywords
eläinluut, osteologia, arkeologia, ruumishauta, hautaus, rituaali, tulkinta, rautakausi, keskiaika, historiallinen aika

Säilytyspaikka – Förvaringställe – Where deposited
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Table of Contents

1. Introduction

This Master's thesis sets out to study mortuary behaviours involving animals in Finland over the time period from late Iron Age in Finland (AD ca 800-1200) to the 18th century. During this time the religious tradition was in the process of change; the Swedish crusades started to convert the Finns and later on the religion changed from Catholicism to Lutheran. The burial tradition changed from cremation to inhumation. There is some literate evidence, namely canonical laws from this period. The early laws were introduced when problems occurred in the conversion process for example forbidding burials in old, often later Iron Age grave mounds. The law implies that people favoured burials in the old mounds instead of burials in graveyards. The Church obviously saw the old burial custom as problematic and thus forbade the ritual (Ersgård 1996:9).

1.2 Background

The past research has focused on material remains for a long time. Most archaeologists have suggested that the artefacts in the graves reflect social status of religious beliefs (e.g. Rasch 1992:181). As a result we have lost an important dimension which includes, among others, folk belief and religion (Lagerlöf 1991:17). Until now Finnish researchers have mostly been interested in grave orientation, clothing, jewellery and objects found in graves (see e.g. Cleve 1948; Kivikoski 1955; Lehtosalo-Hilander 1982a-c; Salo, U. 1987; Riikonen 1990; Purhonen 1998; Koivisto 2006) and rarely on the physical anthropology of the deceased (e.g. Formisto 1993). The burials are in most of these cases been studied only by the layer where the deceased is lying which is considered to be the "real grave". This set of thinking has set aside the important fact that the grave filling is also a part of the grave.

The grave filling sometimes contains animal bones. Animal bones can also be found in the same layer as the deceased. Previous research looking at animal bones in graves has been minimal in Finland until now. Only one Master's thesis on this subject is done. Ulla Tupala (1999) studied animal bones found from Iron Age inhumation graves in Finland. Her research on the graves from Luistari in Eura left a lot of unanswered questions. The most recent Finnish thesis discussing, among other things, this subject is done by Kristiina Mannermaa (2008). She discusses the roles of bird bones in the Stone Age inhumation graves in Ajvide, Gotland and Zvejnieki in Latvia.

One might argue that it is unnecessary to study graves from the early medieval period because written information of the burials is available in canonical laws. Written sources, however, often describe what people were supposed to do. With archaeological material it is possible to find out what people really did (Falk 2006:200). This is very important considering the situation in Finland. Most of the information we have from our medieval and early modern graves are known to us from written sources. These sources have made an illusion that we know our past. In Finnish material the written data seems to describe what was supposed to be done and not what was really done in Finnish parishes.

Animals are rarely mentioned in the old texts but animal bones are sometimes found in graves, even from (medieval) Christian period which in traditional thinking lacked animals in graves. The archaeological material can provide a picture closer to the actual events, and osteological material is in a key role in understanding mortuary behaviour involving animals. This study is based on the osteological material and context descriptions on excavation reports and/or published material. Since much of the material was not analysed before, I have analysed some of it for this Master's thesis.

1.2 Aims of the study

The purpose of this Master's thesis is to firstly, find out the purpose of the animal bones in graves during the period subjected to this study (AD 700-1700); secondly discuss similarities and differences in the animal bone material in graves during different periods; thirdly see if there are differences in the burials (regarding the animal bones) between the eastern and western parts of Finland and the coastal area, and fourthly, discuss correlations to the neighbouring areas/ countries.

The base of this study is a list of all the inhumation graves in Finland from the Iron Age based on two databases in the www-pages of the National Board of Antiquities. The list is attached to this study in appendix 1. The databases used for this study, are the register of archaeological sites (fi. *muinaisjäännösrekisteri,* National Board of Antiquities 2009a) and the register of archaeological projects (fi. *hanketietokanta,* National Board of Antiquities 2009b). These databases contain distinct information. To get a sufficient sample and to be able to discuss the eastern burial tradition, I have included some sites in my list which are now under Russian rule but were once part of Finland. These sites are not found in the databases on the National Board of Antiquities but are mentioned, for example, in the thesis of Paula Purhonen (1998).

I have studied the excavation and the osteological reports covering the time frame in question. I have also deconstructed the information in these reports and re-interpreted the material. Some of the reports were unavailable in the archives, some of the oldest were not even written. Based on the reports, I have taken a sample of sites from SW- and S-Finland and also the Russian border. This decision was made because the burial traditions are thought to differ in the western and eastern parts of Finland due to influences from Scandinavia and Russia. The main criteria for choosing a site were the burials descriptions in the excavation reports and the fact that the burial contained animal bones. Considering the contexts and the references to animal bones, one might say that the reports are of insufficent quality. This does not mean that the sites did not actually have animal bones, but simply that the bones were not mentioned in the reports. This becomes obvious in some of the material descriptions in chapter 5. It is important to know the contexts of the bones, because it is the context that tells the relation of the bones to the burial ritual and the grave. The context descriptions are missing in some occasions and the interpretation was made based on the osteological material. Due to sampling, six sites are subjected to the study (see also figure 1.):

Luistari located in Eura. The site has burials dated to late Iron Age and possibly medieval hamlet burials. There is also Bronze Age settlement and cairns located in the cemetery area.

The Church of the Holy Spirit is situated in Turku. The site was used as a town burial during the 17th century.

Finno in Espoo is situated some 15 km west of Helsinki where burials from a medieval hamlet were found and excavated in 2006.

The churchyard of the Cathedral of Porvoo was used for burials of the town's people at least during the 18th century.

Visulahti is located in Mikkeli where mainly Iron Age burials are found with some uncertain animal burials.

Suotniemi is situated in the Karelian Isthmus (in Käkisalmi parish) and is part of Russia. When it was discovered in the 19th century it was still part of Finland and the inquiry reports are therefore deposited in the Finnish archives. The documented burials are probably from the Iron Age.

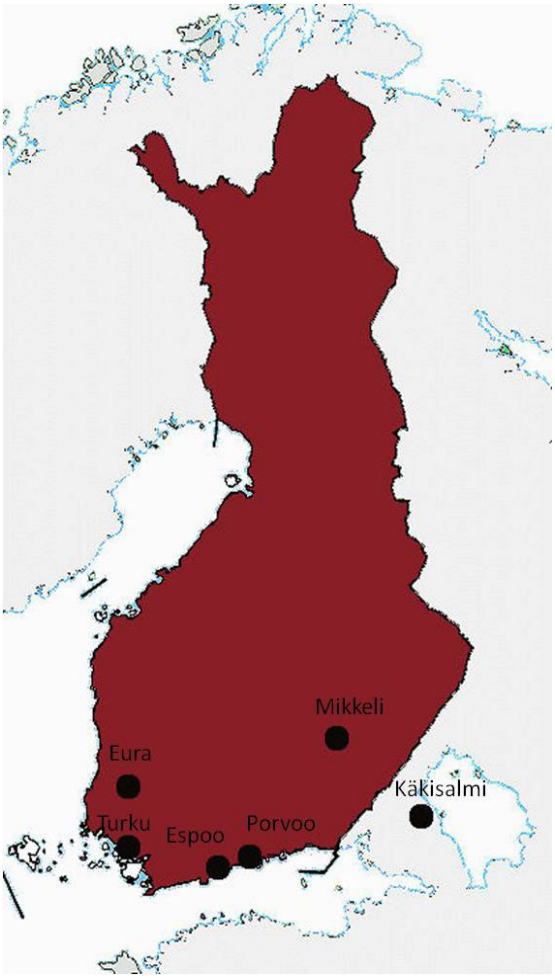

Figure 1. Location of the studied sites.

I have made three osteological analyses for this Master's thesis (The Church of the Holy Spirit, Visulahti and Suotniemi), the remaining three were already analysed before. This data was analysed in order to identify issues related to the burial practice during the Iron Age and early medieval period. If animal bones where identified, the excavation reports where used to clarify the context of the bones. The bone material analysed for this study are only presented here and the results are discussed based on three written reports (Kivikero 2010a-c).

The bones will be further analysed by comparing the contexts, the taxon and the type of the bone to interpretations of the bones. This might seem to be a simple method but it has not been used in full capacity previously.

1.3 Definitions and chronology

In this study I use a variety of burial terminology. To be clear on the meanings of these terms some definitions are given below.

A burial is, according to Oxford dictionaries, "the action or practice of burying a dead body". It can also be '"a ceremony at which someone's body is buried, or a grave or the remains found in it" (definition of burial noun from the Oxford Dictionaries Online). Cambridge dictionaries describe a burial as "the act of putting a dead body into the ground, or the ceremony connected with this" (definition of burial noun from the Cambridge Advanced Learner's Dictionary). The term includes some sort of mortuary practice.

A grave on the other hand is consciously constructed or localized, and is meant for (and takes in) human remains (Engstöm & Wikborg 2007:18). Oxford dictionaries define the grave as "a hole dug in the ground to receive a coffin or a corpse, typically marked by a stone or a mound" (definition of grave noun from the Oxford Dictionaries Online). Cambridge dictionaries simply state that a grave is "a place in the ground where a dead person is buried" (definition of grave noun from the Cambridge Advanced Learner's Dictionary). The term "grave" is also used when describing the layer where the deceased is laying (see e.g. Lehtosalo-Hilander 1982a-c, Tupala 1999), however, it is just a part of a grave. A grave includes a pit dug to the ground, the deceased, a filling and the remains left from the funeral occasion. It is important to remember that a grave context is always ritualistic.

Animal sacrifice refers to ritual killing of the animal. In this study the sacrifices are done in funerals (e.g. discussion in Petropoulou, M-Z 2008:1-31). Offering, on the other hand, does not necessarily include bloodshed. Offerings can be in the form of artefacts or food in burials (e.g. Rasch 1992; Graslund, A-S. 1991; discussion in Petropoulou, M-Z. 2008:1-31). Both will be discussed in later chapters.

Finnish late Iron Age and 18th century is divided into the following periods: the Merovingian period (AD 550-800), the Viking Age (800-1025/1050), the Crusade period (AD 1025/1050-1150/1300) and Medieval period (1155-1323/1523). The Crusade period and Medieval period can overlap depending on the usage of the terms. The Medieval period ends with the beginning of reign of Gustavus Vasa (*Kustaa Vaasa*) in 1523, at the latest. The time after 1523 can be called the renaissance (Edgern 1998; Törnblom 1998).

2. Graves as study material

For a long time archaeologists suggested that items found in graves reflect the direct status of the dead person. Yet, some archaeologists regarded burial practices as the result of religious beliefs and thought that burials do not provide any information about the status of the dead or about the society in which they lived in (see e.g. Rash 1992:181; Nilsson Stutz 2003:18-54; Insoll

2004). Graves might reflect different things to different people and this chapter describes some of these thoughts. It is evident that the way the information is gathered from the excavations is a critical aspect that also affects the interpretation. There lies a representativity problem in the archaeological material. It is impossible to know whether or not the material really reflects the past reality and to what extent since no one is here to tell us (Gräslund, A-S. 1996:21, Nilsson Stutz 2003:50-53).

2.1 Graves as a focus

Graves can reflect the society's thoughts on religion, cultural identity, cultural structure and on the environment as classified in table 1. (Lagerlöf 1991:17). When the amount of individual or collective work that was put into the construction of a grave is analysed, religious and social motives can be noticed (see also Gräslund A-S. 1991:84). Burials might also be meant for collective or individual use. They are thought to be the last resting place, and as such they reflect the thoughts about the afterlife. Whether the souls of the dead are assumed to continue somewhere else might be evident in the way the dead are treated during funerals. There might be traces of grave goods and food on top of the graves, which will be discussed further in chapters 3 and 4.

Table 1. Presents the information that can be detected in graves, according to Lagerlöf (1991:17).

Social/ ideological	community structure cultural identity religion	individual
		collective
		family structure
		working situation
		physical and mental health
		folk beliefs
		philosophy of life
		conception of death
		belief on death
		cult
		magic
Ecological/ economical	environment/ ecological niche	basic means of livelihood
		handwork/ handicraft
		production, distribution, consumption
		communication
		ownership

Nonetheless, it is the living who buries the dead either to dispose of the rotting body or to come to terms with the disappearance of a dead person. This has to do with the social relationships people have with each other. The cadaver might be seen as neither dead nor alive since the

body still resembles a living person (Nilsson Stutz 2003:95). Even though the study of the graves concentrates on the dead, the main focus in mortuary archaeology is on the living and their relationship with the dead (Gräslund, B. 1994:15). As death is a special context, the followed and reflected values are not necessary the same as in the normal society (Nilsson Stutz 2003:74). The treatment of the corpse gives us a way to understand how the person lived and died. As archaeologists we cannot dig up funerals, only deposits resulting from the funeral practices (Parker Pearson 1999:21, 45, 49). The objects and grave goods are sometimes regarded as reflecting the dead person's or the mourner's beliefs, whereas the funerary rites are ascribed to religious beliefs (Rasch 1992:181). People are the actors who decide who gets buried in which way and where, according due to their cultural norms (Henderson 1987:49; Roksandic 2002:101).

2.2 Burial deposits

Burial deposits are formed by a certain event in the history. Burials which are dug on purpose are mostly pit features dug through soil layers which may be naturally or culturally/artificially formed (Hochrein 2002:47; Henderson 1987:49-52). The grave is then, after some sort of burial practice, filled with the same soil that previously filled the grave space or with some other soil. The soil could be imported from a nearby dwelling place which has importance to the society or to the persons burying the dead. To understand the mortuary practices, it is thus important to distinguish which of the soil formations are naturally formed and which originate from human agents (Roksandic 2002: 101). The burial deposits examined in this study are graves that are made on purpose.

Taphonomy is one method for understanding the formation processes. The term comes from the Greek words *taphos*, which means burial, and *nomos*, which means law (Efremov 1940). The term was first introduced in palaeontology by Ivan Efremov (1940) in order to describe the study of the transition of remains from the biosphere to the litosphere. The transition is to be understood as death assemblages and the preservation of organisms which can be studied under various disciplines, such as palaeontology, biology, archaeology and forensic anthropology. The disciplines may have different starting points, for example archaeologists may think of the site as the focus of the taphonomical study and palaeontologists might think of the dead organism as the object of the study (Haglund & Sorg 2006a:3). In sum, taphonomical study aims to understand the time period between the death of a human or an animal and the time of recovery (Fortelius 1981:9; Lyman 1994:1). This includes the time of death, the deposition to the site (also post-mortem disturbance) and the time of recovery (Haglund & Sorg 2002:7, 12; see also discussion in Nilsson Stutz 2003:131-139).

John O'Shea identifies three significant factors which influence the observation and explanation of funerary behaviour and burial customs. Firstly, he names the size of the burial structure and how much effort was put into constructing it. The second point is the formation processes, and the third the limitations recognizing and detecting archaeological formations (O'Shea 1984:23). The burial structure determines how easy it is to see the actual burial. A burial which is marked

by a structure is easier to detect above ground than an unmarked burial. A large structure might also imply to the researcher that the whole community has made an effort in building it. Such efforts are often linked to highly regarded persons.

The formation processes can be divided into natural and cultural processes (O'Shea 1984:24-25; Nilsson Stutz 2003:138) where archaeologists have a key interest is in the cultural factors and on how the living society related to the mortuary practises (Nilsson-Stutz 2003:148). However, natural factors can also influence the cultural deposits. Understanding the natural factors makes the cultural formations easier to distinguish. In burials, people are the actors influencing the deposits and also the treatment of the animals which may be placed in or on top of the grave (Fortelius 1981:10). The third factor O´Shea mentions concerning the limitations in detecting and recognizing burial formations, is the factor we as archaeologists can have the most influence on, as well as on the recovery process.

Decomposing of an organism can be regarded as a natural formation, although, the organisms are culturally deposited into the ground, as in the case of a grave. The decomposing of the body can be divided into three phenomena: decomposition caused by bacteria, autolysis caused by enzymes and destruction caused by organisms (mostly insects). Autolysis is the first to occur and basically means that the cells break down through the action of its own enzymes (Laiho 1993:73; Roksandic 2003:101). Decomposition is mainly caused by bacteria combined with autolysis. The result of these reactions is a number of gases. The largest single source of bacteria is the intestines (Laiho 1993:74).The decomposition is often increased by insect and animal activity which can be enhanced by warm weather. Animals might cause missing soft tissue and scattered body parts (Laiho 1993:76-77; Lyman 1994:140-142, 161-162; Gill-King 2006:93-96). Temperature, the chemical and physical effects of water, oxygen availability, acidity and alkalinity are just some of the factors contributing to the decomposing of human and animal remains (Gill-King 2006:93-95).

The time scale of decomposition varies depending on the temperature and the moisture in the environment and on the acidity of the soil. Oxygen deficiency slows down the decomposition in burials. According to the rule of Casper, one week in the ground corresponds to two weeks in the water and eight weeks buried in the ground (Laiho 1993:75). Decomposition of soft tissues on average takes three to four years in a grave. The ligaments take about five years to dissolve and ten years for the fat in the bones to disappear and dry out. Incipient erosion of the bone occurs after 10-15 years (Laiho 1993:76). Extrinsic factors in the soil, such as chemistry and porosity of the sediments, influence bone preservation (Henderson 1987: 45-47). Heavy clay soils may stimulate the adipocere production and have preservative effects. In dry soils organic remains are preserved through mummifying (Nilsson Stutz 2003:147). Bone destruction is higher in soils with low pH or in acidic environments (Gordon & Buikstra 1981:596; Gill-King 2006:95 and literature cited). The Finnish soil generally has a low pH which decomposes the bone material actively.

The bone tends to preserve better the denser it is. The environment and the size of the bone also affect the bone preservation. Usually larger bones preserve better but sometimes the preservation might favour smaller bones (Fortelius 1981:10). The preservation of mammal bones is de-

pendent on the size and structure of the bones. Smaller bones can break easily and be too small to be recovered from the site while larger bones might be preserved in so small fragments that they are no longer identifiable. The best preserved bones are small and compact such as phalanges, bones from the wrist and ankle (Fortelius 1981:14) and teeth. The most typical fish bones in assemblages are the vertebrate and parts of skull bones. This might be caused by their small size which leads to the conclusion that all bones are not recovered from the site. Some species, such as salmon, have poorly calcified and greasy bones which might lead to their poor preservation (Fortelius 1981:13). Bird bones are hollow, have thin cortical walls and break easily. That is why often only fragments of the long bones are recovered (Fortelius 1981:14).

The taphonomical processes might alter the biological decomposing of, for example bones. This might result in the fact that bones from different species preserve in different ways in different environments. That is why the occurrence of certain bones does not necessarily show the actual number of species or bones deposited at the site. Also different eating habits and rituals produce different kind of bone assemblages (Fortelius 1981:9-10).

The cultural treatment of the body and burial can have preservative effects. Some mortuary deposits include the treatment of the body together with some objects or grave goods placed to the grave (O'Shea 1984:24). In Finnish graves organic material is often preserved close to bronze objects. The metallic sulphides from the bronze are the reason for this preservation. Also a well sealed coffin slows the decomposition process whereas a porous and frail coffin speeds up the decomposition by passing moisture and creating a good environment for digesting organisms. Clothing and shrouds will also slow down the decomposition when coffins are not used (Nilsson Stutz 2003:147).

Cultural factors, such as disturbance, might result in post-depositional changes in the original burial. The disturbance may be intentional, coincidental or accidental. Destruction of earlier graves may occur when a contemporary society places its graves close to each other in a limited area (O'Shea 1984:25) mixing the grave fillings. This kind of action is more likely to be intentional but may also be coincidental or accidental. Burial contexts may also be disturbed by unrelated cultures, such as our own. The disturbance may be accidental resulting from the reuse of a particular location. Such disturbance could for example be ploughing of a field previously used as a cemetery (ibid.). Later cultivation on the burial place may bring remains to the surface and cause mechanical changes (breaking) in the bones. Also chemical effects from fertilizers and such can cause alterations in the bones (Haglund *et al.* 2002). Post-depositional movement of the bones in the graves may cause empty places in the graves which are later on filled (e.g. Roksandic 2002:103). Sometimes burials may be exposed naturally or artificially and bones may be scattered by scavengers (Littleton 2000).

With regard to taphonomy (and all archaeology) one must remember that burials are selected traces of death assemblages. A burial place represents a sample of the dead in the community. Further on only a sample of the dead is preserved and only a sample of them are recovered or found.

2.3 Excavating burials

The archaeologist can only observe those aspects of the mortuary practice that produce physical changes in the deposits. The physical changes should also be preserved through the deposition and recovery processes. The challenge in this is to determine the completeness of the studied burial site and to make interpretations on the basis of the available material (Clarke 1937:16; O'Shea 1984:27).

In addition to the study of preservation of the bones the excavation techniques influence the amount of information that can be extracted from the burial contexts. In the material used for this study there are different examples of excavating and documenting graves. This is because Finnish archaeology lacked standards of excavating and documenting burials. Standardization of guidelines is still under construction (see Salo *et al.* in press).

The decisions made during field work affect the interpretation of the burial. There is, for example, a difference between excavating in layers or in features and depending on how detailed the descriptions of the burials are. Every detail is important in understanding the ritual behind the formation processes.

The excavation, collection and documentation of the site are predicated on the perception of the investigator, the collection methods used (Haglund & Sorg 2006b:20). As William Haglund and Marcella Sorg point out, the recognition of nonhuman, human and partially represented bones or adolescent individuals are essential in the study of grave deposits. This can also be seen as a key issue in the analysis of the material from the church of the Holy Spirit. Investigator's perception and recognition of the observations of the context may significantly affect the collection and analysis (ibid.).

An example of choices made during field work is from 1928, Franttilannummi in Mynämäki. The excavation leader Helmer Salmo noticed bone residue in the soil but they were ignored because cattle and horse were known to be buried in the ground during at a later time period. Only when an inhumation grave was recovered, Salmo points out that bones that had previously been bypassed as unimportant were perhaps of importance (Salmo 1928).

Level excavations were previously used in burial excavations. The grave was divided into squares and excavated in 5-10 cm layers. This would sometimes result in lack of information regarding the amount of interpreted individuals. The individual might never end up in the final analysis as a whole, only as separate bone collections. Although, burials are nowadays mostly excavated in features, level excavation is prefered by some archaeologists.

3. Religion and belief

Changes in the burial custom are tied to new influences such as religion. During the late Iron Age, Christianity spreads to Finland. The Christianization process is studied and interpreted from historical texts and burials. This chapter concentrates on the Iron Age beliefs about death and burial and Christianization of Finland.

The term ‘‘religion’’, which is often used to describe practices, actions, rituals, beliefs and material culture of the past cultures might originally be an explicitly Christian term (Saliba 1976:142-155, 175-177; Insoll 2004:6). Timothy Insoll stresses that the word might be inappropriate to much of the material that archaeology covers since the word gives us a mental picture of what religion should be. The term is difficult to define because it concerns things that are intangible such as thoughts and beliefs which might be varied in different ways. Because of the difficulty of defining religion, it is much debated and because of this, also the types of religion are much debated. These types are world religions and traditional or primal religions (Insoll 2004:6-8; see also Jonuks 2005). Religion and ritual (archaeology) are widely discussed in other publications (e.g. van Gennep 1960; Bell 1992; Nilsson Stutz 2003; Insoll 2004). In this study I will concentrate on the issues involving animals, Iron Age and Christianity.

3.1 Death beliefs during the late Iron Age

Most world religions have a homogeneous conception of belief consisting of a personality and a consciousness (such as in Christianity and Judaism). Traditional religions have often a plural concept of belief which is composed of a body soul and a free soul. The body soul represents vitality and personality. The free soul is often thought to be active with regards to sleep, ecstasy, trance and unconsciousness. In world religions the soul is thought to leave the body during the moment of death. In traditional religions, on the other hand, the soul cannot leave the body until the corpse is decomposed or changed its form for example by cremating, drying or smoking (Gräslund, B. 1994:18; Gräslund A-S. 2002:43-44 and literature cited). The free soul is thought to represent the deceased in the next life, although, only as a vague image-memory.

The deceased is believed to have the same needs as when still living, so the mourners provide food, clothes and company as long as the free soul remains in the body. These beliefs are thought to be universal and independent of cultural variables (Gräslund, B. 1994:17-18). The presumptions, though, are based on anthropological theories, which is always risky if the formation context is ignored (Nilsson Stutz 2003:51). In these traditional beliefs the burial is thought to assure the transfer to the next existence. Properly done, funerals guarantee the acceptance of the soul in the ancestor world and the continuation of social life (see further discussion in Vilkuna 1989:67; Gräslund, B. 1994:17).

The transformation of the soul can be seen as a rite of passage. Rite of passage means that the person moves from one determined phase to another. It can be divided into three phases: sepa-

ration, transition, and incorporation. The phases can be connected with death, but also with other "crisis" situations in life as for example marriage or birth (van Gennep 1960: 146-165). Death can also be called the ultimate rite of passage because it separates the person from the living society (Nilsson Stutz 2003:79-80).

Separation can be thought to be the phase when a person dies, and incorporation as a means of being part of the dead ancestors through funerals. The transition phase in between occurs when the deceased is no longer alive physically but still resembles a living person. This is a significant phase for the mourners (van Gennep 1960:146-165; Nilsson Stutz 2003:67-80). In funerals the physical separation can be achieved by placing the dead in a particular place where the entrance to the other life is thought to be located (Parker Pearson 1999:124, 131).

Rites are more action than thought (Nilsson Stutz 2003:51) but the action has a thought behind it (Jonuks 2005:51). Rites may also be connected with rules and taboos which influence the burial. Therefore a man buried with weapons should not be interpreted solely as a warrior. The practices behind the burial, how they were manifested in time and space, should be clear (Rasch 1992:182).

The soul beliefs from the traditional religions are also linked to the Iron Age society where indications of these thoughts can be seen through burials: cremation (destroying the body to free the soul) and objects placed to the graves (grave goods). On the face of such actions it has also been suggested that the dead lived in the graveyard during the Iron Age (Purhonen 1996:125-126; Williams 1999:57).

The Iron Age beliefs can also be regarded as pre-Christian beliefs. The term ‘‘pre-Christian’’ can work with periods not so distant from the Christian period, but the term ‘‘prehistoric religion’’, which discusses more distant times, is suggested to be more neutral (Jonuks 2005:40). The term pre-Christian suits this study on the grounds that late Iron Age preceedes the time of more intensive Christian expansion.

3.2. Grave goods

Grave goods can be everything from food offerings, animal sacrifices, weaponry, tools to personal objects placed in the grave to accompany the deceased in the afterlife (e.g. Kivikoski 1955:21; Rash 1992:186; Gräslund, B. 1994:19; Gräslund, A-S. 1985, 1991, 2002). Some grave goods may have been specially made for the deceased and the funeral (Parker Person 1999:85). Bo Gräslund argues that the soul needs the equipment for the journey to the other side. Without the grave goods the spirit is unable to enter the society of the ancestors. In order to obtain the desired ideological effect, the objects are to be placed close to the deceased when his/her spirit is freed. In the case of inhumation, the goods could be placed in the grave with the body (Gräslund, B. 1994:19).

The grave goods could have different functions and roles in the burial, although, they are always carefully selected for the occasion. Food offerings are often left for the deceased but are equally often consumed by the mourners. A portion of the food is left for the dead. The animals generally thought to be left as food offering are cattle, sheep and pigs (Parker Pearson 1999:11), but also wild animals can be found. In Sweden food offerings are often found in clay vessels. In inhumations the food is often located behind the head of the dead person (Rasch 1992:186-187). In Estonia food offerings are often sacrificed at the head and the feet (Valk 2001:81-82). In Finland the bone decomposes quickly, but traces of pottery could indicate food offerings for the dead.

Animal sacrifices can also be deposited in the ground with the deceased. Sacrifices contain bones from the entire animal, whereas food offerings include only parts of the animal. Sacrifices are also usually placed on top of the dead or beside him/her (Rasch 1992:188). The most common animals in these types of grave goods are horses and dogs and occasionally birds and hares. Humans might also have been sacrificed (Rasch 1992:187-188; Parker Pearson 1999:11). As Monika Rash pointed out, food offerings can be related to the burial practice and can still be observed, as for example, the Last Supper of Christ in the Christian faith. She thinks that food and animal offerings should be connected to the burial rite and its rituals (Rasch 1992:197-198). Olavi Rimpiläinen has argued that in early Christianity offerings and sacrifices were regarded positively. They were thought to help the deceased to reach the afterlife (Rimpiläinen 1971:15).

The existence of grave goods could be taken as evidence for the belief in an afterlife and a soul. The thoughts are based on archaic traditions preserved in early texts and on anthropological data (Gräslund, B. 1994:19). However, these thoughts might be more associated with our own religious and cultural background than the reality (Parker Pearson 1999:147).

3.3 The Christianization of Finland

The Christianization of Finland is a debated subject in Finnish archaeology. The discussion is made even more complex by the geographical location of Finland between Russia and Sweden. Christianity has apparently been spread from both directions: the Orthodox Church from the Russian side and the Catholic Church from the Swedish side. The western parts of Finland are thought to follow the Scandinavian and Baltic way of burial at least since the Bronze Age. The division to different ways of burial in eastern and western Finland may thus already derive from the Iron Age (Huurre 1990:158-164, 169-171).

As written sources of such early date are almost completely absent in Finland, the process of adopting Christianity can be studied with reference to so-called Christian artefacts, burial customs and some historical texts. The historical texts are mostly legends of crusades to Finland by the Swedes during the time of 1155 to ca. 1350. This period is called the Crusade period and it starts during the end of the Viking Age. It is partly overlapping with the Medieval period which is dated to ca. 1155-1523 (e.g. Lindkvist & Ågren 1985:1; Törnblom 1998:273).

In these legends Finns are converted to Christianity for the first time by Bishop Henry (*Henrik*) in 1155 or 1157 (see e.g. Pirinen 1991:38-42; Gallén 1998:33-38). The second wave of crusades is said to occur in 1248/1249 and the third in 1293. During the 12th century conversion expeditions were allowed to be called crusades only if they were directed towards infidels and pagans. The proper crusades would also be proclaimed by the pope who would give the participants an absolution. This was probably not the case in Finland. As a consequence there is a variety of opinions among scholars on the occurrence of crusades (see e.g. Pirinen 1991; Hiekkanen 2002:79-83; Lehtonen 2002:84-85; Lind 2006:39-40). The first record of the first Finnish crusade was written some 150 years after the occurrence and it is unclear if it even could be regarded as a crusade. The third crusade was directed to Karelia at the same time as people from Novgorod were making raids in the area (Lehtonen 2002:84-96).

Unfurnished inhumation burials and the E-W orientation of graves are thought to be the archaeological evidence supporting the spread of Christianity to Finland prior to the crusades. Inhumation burials start to appear in Finland during the 6th century in *Eura-Köyliö* region on the western coast of Finland. In the rest of the coastal region inhumation burials start to occur in the 11th century. The earliest burials still contain objects which are thought to be an indication of combining the old beliefs with the Christian religion (e.g. Cleve 1948; Kivikoski 1955). The use of shrouds in graves instead of clothing is also linked with Christian burials (Rimpiläinen 1971:27 and literature cited) because they would leave an empty grave when decomposed. Nils Cleve and Markus Hiekkanen connect the unfurnished graves with the use of shrouds in burials (Cleve 1948:73-74; Hiekkanen 2003:161-163), although, evidence to support this custom is insufficient. insufficient. If no metal objects are placed in the graves, the body and eventual textiles become completely decomposed. In this sense it is impossible to know whether or not shrouds have been used in the burial instead of the deceased's own clothing (when metal is not used in the clothes). The E-W orientation of graves is often linked with the deceased watching towards the sun during the resurrection (Pirinen 1991:30; see further discussion in Gräslund, A-S. 2002). The occurrence of cross pendants in graves is also said to be proof of the spread of Christianity to Finland and primsigning of their wearers (see e.g. Cleve 1948; Kivikoski 1955:29-30; Purhonen 1998:150-152). Hiekkanen has criticized the idea of primsigning and estimates that the use of crosses in burials may have something to do with the families' traditions instead of Christian belief (Hiekkanen 2002:79, 2003:13-14).

The first contacts with Christianity are thought to derive from trade (see e.g. Cleve 1948; Kivikoski 1955; Purhonen 1998). It is however debated when and where this happened. For example Unto Salo proposes that the crusades were the last phase of a long Christianization phase which had already started in AD 50-200. He bases his claims on the spread of Roman objects to Finland. With these objects the stories about Christian beliefs would have reached Finns, especially after 380 when Christianity was the main religion in Rome (Salo, U. 1995:13). Aarni Erä-Esko links the animal ornaments from the 6th century artefacts to missionary activity (Erä-Esko 1965:111-112). Jukka Luoto on the other hand does not believe there were Christians in Finland prior to AD 800-900 (Luoto 1997:127).

Markus Hiekkanen relates the conversion of the Finns to the end of the Viking Age and the beginning of the Crusade period. The new belief would spread to the permanently settled areas of Varsinais-Suomi (Finland Proper), Häme and Satakunta region. Hiekkanen described the coasts of Lake Ladoga as a fast growing settlement. Uusimaa in the southern coast is described as being almost completely deserted during the Iron Age and getting new inhabitants from Sweden in the 1100-1300 (Hiekkanen 2003:13). The hypothesis that Uusimaa lacked permanent settlement is challenged by Georg Haggrén and Henrik Jansson, who have proved that the coastal and archipelago zones have been occupied at least from the middle Iron Age onwards (Haggrén & Jansson 2004). The scarce evidence of settlement sites in Uusimaa during the time of conversion is probably due to lack of excavations in the area, especially considering that Christianity is believed to spread from west and south-west (Hiekkanen 2002:78).

The western coast is thus basically thought to have adopted the Catholic belief from the west and south-west. The conversion process is made more complex with cross pendants from the Byzantine found in western Finland (Lieto). There are also some words, such as pagan (*pakana*), priest (*pappi*) and cross (*risti*), which were taken into the Finnish language from the Russian sometime during the 9th century (Salo, U. 1987:113-114 and literature cited; Hiekkanen 2003:14; Lind 2006:39). Paula Purhonen does not consider this evidence to be a problem because the eastern and western Churches were separated in 1054. In her opinion the crosses and vocabulary were spread by the same church (Purhonen 1997:378, 1998). John Lind also proposes that before AD 950-1050 there was a joint effort from the eastern and western Churches to convert the northern peripheries (Lind 2004:14). It can also be debated whether the Christianization was faster on the top layers of the society and slower amongst the lower classes (cf. Gräslund, A-S 1985:291, 1996:21; Hiekkanen 2003:12-15).

The conversion of the eastern parts of Finland is seen to be more straightforward than in the west. The city state of Novgorod was converted into Christianity in the beginning of the 11th century (Pirinen 1991: 17-18; Hiekkanen 2003:15). Before that it is claimd that the merchants pretended to be Christians so that they could pay less in tax when doing business (Petrukhin & Puskhina 1998:247). The Orthodox tradition spread after that to the north (Hiekkanen 2003:15). Apparently both Novgorod and Sweden were interested in governing Karelia already in the late 13th century (Lehtonen 2002: 95-96). Unto Salo dates a forced christening of Karelia by the Novgorodians to 1227 which would establish the Orthodox religion in Karelia (Salo, U. 1995:12). During the Treaty of Pähkinäsaari in 1323, Karelia was divided between Sweden and Novgorod. The most NW part of Novgorod, Savilahti, later called Mikkeli, would be shifted to Swedish rule (Hiekkanen 2003:15), and quickly integrated to the Catholic Church (Valk 1994:62). The main part of Karelia became the county of Käkisalmi and in this area the Orthodox Church was free to govern (Kuujo 1955:168).

Although the majority of the people living in the Käkisalmi county was superficially Christian, they still kept their old thoughts and ways. During the 1530s the Archbishop of Novgorod tried to get rid of superstition. He describes how people worshipped nature and would perform sacrifices of animals, such as oxen, lambs and other sorts of animals and birds (Kuujo 1955:173-174 and literature cited). Heiki Valk suggests that the reason why traditional ways were tolerated in

areas such as Setumaa in Estonia and Karelia was due to their nature as geographically peripheral regions (Valk 1994:62). The Christian graves seem to have a different nature in Karelia and Estonia than in western Finland.

The change in religion and belief is a slow process, and is established if the new religion is regarded as attractive by a fairly large number of individuals within a group. It should also be known for a long time before (Theliander 2005:52). In that case it would be easiest for Christianity to establish itself if it was known for a fairly long period (which it seemed to be). The adaptation would also need some kind of attractiveness to draw large groups of people to believe in the new religion. These motifs are still unclear.

4. The burial customs in Finland during AD 8th-18th centuries

This chapter sheds light on Finnish burial customs from the 8th century until the 18th century. During this time, cremation burials make room for inhumation burials, the first inhumation burials being in the cremation cemeteries. The inhumation burials spread probably with Christianity. The Christian burial tradition is divided into eastern and western customs. The distinction is probably based on old religious borders between the eastern and western Churches. The western side covers Catholics and after the Reformation in the 16th century the Swedish Lutherans, and the eastern side the Orthodox (Pentikäinen 1990:77). The borders between the two Churches were already established in 1323 by the Treaty of Pähkinäsaari. The religions might also been blended with the pre-Christian beliefs.

4.1 Burials in Finland during the 8th-11th centuries

To evaluate the changes or similarities in burials it is adequate to summarize the burial custom from the 8th to 11th centuries. It is a time when changes in the burial custom start to occur in Finland and the old way of cremating the deceased is thought to give way to inhumation burials.

Cremation cemeteries under level ground were in use from the 7th to the beginning of the 12th century. The cemetery consists of a sturctureless stone layer which can stretch out to several hundred square meters. Metal objects, parts of ceramic vessels, burnt bone, slag and soot can be identified between the stones (Edgren 1998: 195). The cremations have a collective nature and taking into account the size of the cemetery it could have been in the use of a nearby hamlet (Edgren 1998:195; Wessman 2010:87pp). Inhumation burials appear in the cremation cemeteries under level ground in the 11th century, mainly in SW Finland (Wickholm 2008:91-92; Wessman 2010:76-78).

Inhumation graves were in use in Eura and Köyliö already in the 6th century. In the beginning, the graves are simple SW-NE oriented pits in the ground. The tradition of burying dead unburned

is thought to be spread from the west. The burials contain the same kind of grave goods as are found in cremation burials from the same period (Edgren 1998:198-199).

4.2 Christian burial in western Finland

Amongst Finnish scholars a Christian burial is determined by its orientation, the lack of grave goods, the use of cross pendants and the arm position (see e.g. Lehtosalo-Hilander 1997; Purhonen 1997). These generalizations are thought to be part of the regulation system of the Church controlled by different laws. We can trace laws considering how and where the deceased should be buried.

According to Bertil Nilsson, burying the dead into consecrated ground was one of the founding principles of medieval Christianity. It was every Christian's right and duty and only pagans, unbaptized children and criminals were denied it (Nilsson 1989:155-165). Those who were not members of the Church were not thought to live after death (Ariés 1976:31). The bodies of the deceased were buried in consecrated grounds in the churchyard or inside the churches. Consecration made the churchyard special and distinguished it from ordinary life which was seen as a preparatory stage for the future soul. Consecrating the graveyard could be done when founding the church or at some other special event. Individual graves could also be blessed (Nilsson 1989:70-76, 155-165).

The way a grave was placed in a cemetery could also have a social meaning. Burials dug inside the Church were considered to be highly valued because the grave would be inside a holy place. People buried near the altar were believed to be situated closest to the martyrs and thus protected by them (Nilsson 1989:37, 134-138). To have a grave near the altar was often a privilege of the upper class, donators (Valk 2001:18), bishops and priests (Hiekkanen 2003:156). The custom of burying inside the church would become so popular, that according to Hiekkanen, fees were set up in the diocese of Turku to regulate who would get buried where (Hiekkanen 2003:156-157). It was most popular during 16th and 17th centuries (Nilsson 1989:134-138). The highest social rank is usually found closest to the church building (see e.g. Valk 2001:18-19). It has also been suggested that people would not have been concerned where exactly the remains of the dead were situated as long as they remained within the holy precincts of the Church (Ariés 1976:22). Burials under the church were forbidden in the 18th century because of hygienic reasons and overcrowding. In consequence the churchyards became overcrowded and more space was needed, and churchyards separate of church buildings were established (Gardberg 2003:63-73). When churchyards became overcrowded the graves would become exhumed and the corpses would be buried on top of each other (Pentikäinen 1990:77).

Relatives were fined if they would refuse to bury the deceased in a churchyard. In an old Norse *Gulatings*- law, dated to the 13th century, everybody had to be buried in a churchyard excluding the persons for whom it was forbidden, such as criminals. On top of that there was a five days time limit for the burial (Keyser & Munch 1848:315, 351). Within this time the deceased was to

be turned over to the church. If there was an exception, the deceased should have been moved to an outhouse in order to wait for the burial. If the deceased was kept inside for more than five days without a good reason, a three mark or öre fine was given and the deceased would immediately be turned over to the church (Robberstad 1937:23; Keyser & Munch 1846:14).

In Medieval Catholic Europe graveyards were founded near the churches, and this tradition is thought to be followed in western Finland from the time of Christianization (Rimpiläinen 1971:15-75). Building churches was a part of the missionary strategy because one was supposed to practice the cult inside the church building (Nilsson 1996:371). The canonical law from the 13th century states that the cemeteries and the church building should be in combination with each other (Nilsson 1989:47, 73). Because of these laws the parish churchyards have been the main burial grounds during the Christian period. These laws have probably inspired Paula Purhonen to speculate that a church or a chapel was situated in the middle of the cemetery in Visulahti (figure 17. in chapter 5.5.1). She bases her interpretations on small traces of charred timber and to an empty space in the middle of the cemetery (Purhonen 1998:125-129). The interpretation has received critique from Markus Hiekkanen who thinks that a chapel construction is unlikely because the early congregations buried inside the church as well. In that case there would be no empty space under the church (Hiekkanen 2001a, b).

Although cemeteries by the church are considered to be the main manner of burial, there are alternative options. In case of considerable distances, bad roads or unfavourable weather conditions, cemeteries could also be established elsewhere (Valk 1994:66). The long distance to churches and chapels was a problem especially in the northern and eastern parts of Finland. Still during the end of 18th century some Finns were buried in for example forest locations or in islands/islets. People living in settlement sites that situated far away from waterways could bury their dead near hamlets (Ruohonen 2002:39-40, 2006:256). During the wintertime people were buried in separate winter graves which were dug during the autumn because the shovels were often made of wood and would not penetrate the frozen ground. The deceased would then become reburied in spring into their right place in the graveyard. The winter graves could also be situated in the outskirts of the graveyard (Gardberg 2003:54-56). Burial places were also established in the vicinity of garrisons and battlefields. Plague and cholera victims were buried in separate cemeteries (Gardberg 2003:76-79).

The usage of old Iron Age burial grounds could be continued if there was for example a shortage of consecrated cemeteries. The Christian influenced burials could be situated in the far end of the old burial ground as Swedish examples have shown (Gräslund, A-S.1992:207, 1996:29). Pirkko-Liisa Lehtosalo-Hilander suggests that some families were stricter in following old traditions than others based on the amount of grave goods. She also proposes that some cemeteries with grave goods could even be consecrated (Lehtosalo-Hilander 1997:33). Village and hamlet burials are thought to be abandoned in western Finland circa 1200 AD and replaced with cemeteries linked to churches (Hiekkanen 2003:15). The burials in the countryside could have followed older customs than those made by the townspeople because of the different economical and social settings (Andersson 1997:396).

4.3 The Eastern burial tradition

The Eastern burial tradition is linked to eastern Finland and the Karelian Isthmus. The burial custom differs from the rest of Finland because eastern Finns are thought to follow the Orthodox tradition. Descriptions of the burial custom are preserved in folklore and some contemporary texts from the 14th century.

In the eastern tradition the burial grounds were located in the nature and the graves were not seen as temporary (Pentikäinen 1990:77). The burials were performed in village cemeteries which were situated close to the settlement sites (Valk 2001:21-23). They were also connected to small Orthodix chapels called *tsasouna* (Valk 1994:64 and literature cited). The dead were also believed to control over the living after death, and they were thought to live in the house until they moved after a certain time period. When the soul left the house, the deceased named animal was butchered and placed in the grave or eaten during the funeral. The animal was named (=given) to the person as a child for the purpose of taking especially good care of it. To have an animal named for a person was typical in eastern Finland. The deceased was bound to the animal even if the person died. It was expected that the animal would follow him/her to the grave. The living did all that they could to ensure that the soul could leave well equipped and would not return. If the deceased did not get his/her own animal, he/she would get it himself/herself by haunting. That is why it was best to give the offer while the soul of the deceased still lived in the house. On certain days after the funeral a commemoration meal was eaten (Vilkuna 1989:34-35, 47, 52, 67, 71, 77, 151, 261).

People also thought that the afterlife of the deceased would begin easier if one was generous during the funeral (Vilkuna 1989:24). In Estonia the local village burials stayed in use until late 17th and early 18th century (Valk 1992, 1994). Heiki Valk considers the burials to have a pre-Christian character (such as grave goods) and thinks that pre-Christian rites can still be observed in the folklore from the 19-20th centuries, although, many of the archaeologically investigated village cemeteries bear no evidence of prehistoric or early Christian times (Valk 1992:220, 1994:64,71). Village burial grounds were also established in large numbers during the Christian period. In situations of long distances or poor transport conditions the local village cemeteries were used (Valk 1994:66 and literature cited), as was also done in western Finland. The continuation of village burials is explained to be the result of declining Christian customs and as an attempt to avoid burial fees (Lempiäinen & Nickels 1990:11).

As in parts of Estonia, the burial traditions in Karelia have also preserved archaic features deriving from the pre-Christian period (Valk 1994:64 and literature cited, Pentikäinen 1990:77-81). Valk claims that the eastern Finnish village burials have no connection to the western Finnish prehistoric traditions (Valk 1994:63). Eating meals on graves and animal offerings and sacrifices are part of different cultural spheres. Village burials continued to be made in eastern Finland as well, because the area was probably considered to be a periphery (Pentikäinen 1990:11; Koivunen 1991:45).

4.4 Ritual meals

Ritual meals are eaten during the funerals, different satges of the burial ritual and on commemoration days. The meals were eaten in order to get a connection to the highest controller, often being the dead or God (Vilkuna 1989:34-35, 67-68, 71, 77, 261) or in order to communicate with the dead (Pentikäinen 1990:26). Commemoration meals are eaten to guarantee the afterlife of the dead by honouring their memory (Honko *et al.* 1993:572, 567). It can also be seen as a way to reconstruct and strengthen the relationship between the dead and the living (Valk 2001:83). Communication between the two parties was considered to be most successful on certain days or holidays. Also the easiest places for the communication were the graves where the dead were thought to live (Valk 2007:145, see also Honko *et al.* 1993:572). The earliest mentions of commemoration meals are from 1428. In the council document from Riga, the peasants of Livonia are said to bring food for their dead relatives and feast at the consecrated cemeteries (Valk 2007:144-145). Commemorative rituals have been recorded in Karelia where it was customary to deliver some of the autumn slaughter to the graves during the commemoration days (Paulaharju 1995:163).

Ritual meals can be connected with fragments of ceramic vessels and animal bones from the upper layers of the excavated burials. At least with the Orthodox Seto in Estonia the first meal occurs at funerals after the grave has been covered, and the food is laid directly on top of the grave. Food and drink are also consumed on commemoration days when the soul of the deceased leaves the body (Valk 2001:81, 2007:142). Pieces of food or some vodka are left on graves. The first drop of vodka has been traditionally poured on the grave, and sometimes food has been buried on a cross. Leftovers from the meals are thrown to the birds (Pentikäinen 1990:29; Valk 1998:39-40, 2007:142). Juha Pentikäinen describes that the Lutheran priests in southern Ostrobothnia tried hard to stop people from ‘‘paganly” drinking at funerals (Pentikäinen 1990:73).

Leaving food to the deceased can also be regarded as food offerings. At least in Estonia the depositing of food on the graves disappeared during the medieval period. Although, there are a few indications of food in the archaeological material, ritual meals are often seen only in the folkloristic material (Valk 2001:77). The same can be said about the Finnish material (Paulaharju 1995). Some food residue from graves in Estonia may be modern. Oral tradition describes eating meals on deserted cemeteries or Iron Age burrows. This should be kept in mind when interpreting archaeological material: food residues might be of different age compared to the burial (Valk 2007:142).

4.5 Cult continuity

Finnish scholars seem to describe the Christianization of Finland as a somewhat simple process of adapting influences through time in three stages. The first adaptations come with trade contacts. The second wave is through intensive missionary work during the Crusade period, and last comes the pure Christian belief towards the end of Medieval period (compare e.g. Cleve 1948;

Kivikoski 1955; Purhonen 1998; Hiekkanen 2002, 2003). The conversion is seen as a smooth shift from one phase to another. People are seen as obediently following church legistlations, altohogh, with some minor resistance. This is the reason why the laws are interpreted to be tenable even though there might not be supporting archaeological evidence for the texts. The process could also be seen as a continuity of cult.

Cult continuity takes place when a church or a chapel is established on top of a pre-Christian cult place (Gräslund, A-S. 1992:129; Hultgård 1992:52). According to Anders Hultgård, old religious actions carried out after the change in religion can also be thought of cult continuation. Another level of religious adaption can be found when the official Christianity adopts pre-Christian rites and connect them to its cultic system. The influences could also be taken into the pre-Christian beliefs where elements from Christianity could be assimilated to the existing one. The purpose might be to strengthen or revitalize the old traditions (Hultgård 1992:52, 61, 81).

Cult continuity in Finnish material is evident for example on the Åland Islands where the Jomala church is built next to Iron Age burial mounds. Also inhumation graves in cremation cemeteries under level ground can be thought of as cult continuity. The "new" way of inhumation burials which is often linked with Christianity is integrated with the old way of burying in collective cremation cemeteries (e.g. Cleve 1943; Kivikoski 1955; Wickholm 2008; Wessman 2010). However, as Ella Kivikoski has pointed out, the way the dead are buried during a time when changes occur in burial traditions does not necessarily relate to the belief of the dead person in question. The funeral is prepared and executed by the mourners who might have other death beliefs than the deceased. The mourners might place objects symbolizing their own beliefs in the graves just to ensure a safe passage (Kivikoski 1955:27, 30). The people could also have difficulties in changing from his/her earlier belief about death (Cleve 1948:74).

According to Bertil Nilsson, the question is what kind of pre-Christian thoughts could survive in the Christian society (Nilsson 1996:427). James Russel suggests that Christianity was Germanized to fit in with the western nature religions (Russel 1994:209-214). We do not know wheather all Finns became Christian and when this occurred (if it occurred). It is also unclear where the people would bury their deceased if they did not accept Christianity. It is possible that people pretended to be Christian just to get their deceased buried in a place that the church laws proclaimed. According to Bertil Nilsson the public way of portraying cult can be different from the private way. The Nordic laws were meant to forbid different cult manifestations that lived on after the officially accepted Christian beliefs. The tolerance level towards unwanted cult manifestations may have varied in time and place. Punishments may have been different towards the public and private cult (Nilsson 1992:38-39).

We have no written evidence of the deceased's fate during the early Christian era in Scandinavia, nor do we know their thoughts regarding myths or folk beliefs (Nilsson 1996:349). The Christian impact penetrated both the community and the individuals and it ought to be visible in the burial customs. On the other hand burial customs are very conservative, so it would be quite natural to find older traits together with the new (Gräslund, A-S. 1992:201). According to Olavi Rimpiläinen, the old way of clothing and equipping the deceased with grave goods was in many

ways mixed with the new Christian ways (Rimpiläinen 1971:27 and literature cited).

Cult continuity can also be linked to animals. In Finnish rural areas during the end of the 19th century one would still give a cow to the parish vicar as a payment for the services (also known as *likstol*) when the man of the house or his wife died. This fee was often thought to be too high, which made people bring the oldest animal to the vicar or reduce the price. Sometimes the cow would be replaced with a sheep. Peasants would even complain that the churchmen took cattle even when it was unnecessary. This can be traced to the Catholic period where the oldest document mentioning cattle as payment to priests is from 1345. Originally the word testament was used to describe a gift given to the church but sometime during the reformation the gift was substituted with a tax (Vilkuna 1989:19, 21-23). The tradition of testament cows might be based on the ritual meals eaten on the graves during pre-Christian times. The Catholic Church simply changed the custom to gift giving in order to save the soul from Purgatory (Vilkuna 1989:28 and literature cited).

Olavi Rimpiläinen links the tradition of eating meals on graves on specific days to the Classical period in southern Europe. The custom could have been adopted by the early Christians, giving it a new content (Rimpiläinen 1971:28 and literature cited). Although commemoration meals are often thought to occur only in the eastern burial traditions, they can also be connected to the western burial cult. Juha Pentikäinen mentions coffee drinking and alcohol consumption to be part of the western commemoration ceremonies where the deceased could even get his/her own bottle (Pentikäinen 1990:80). In this sense the ritual meals and food offerings live on also today in the funerals and the nature of the feast is ecclesial only because churchmen are present (Rimpiläinen 1971:28). In eastern Finland the tradition of bringing food to graves was noticed to decrease after the Second World War, at the same time as bringing flowers to the graves increased (Makkonen 1989:173).

4.6 Distinguishing pre-Christian and Christian burials

Distinguishing pre-Christian Iron Age burials from Christian graves is not an easy task. The works of Michael Müller-Wille and Anne-Sofie Gräslund are often used by Finnish scholars when interpreting pre-Christian and Christian graves (compare Gräslund, A-S. 1985, 1991, 1992, 2002; Müller-Wille 1993 with Lehtosalo-Hilander 1982a, 1987, 1997; Purhonen 1997, 1998; Luoto 1997 and also Kivikoski 1955).

Inhumation burials are linked to Christianization (e.g. Cleve 1948; Kivikoski 1955; Müller-Wille 1993:10; Lehtosalo-Hilander 1997; Purhonen 1997) while cremations are described to be used only during pre-Christian times in North-Europe (reference). The reason could be that cremating the body is seen as an insult to Gods creation work and as a sign of disbelief in Resurrection (Makkonen 1989:170 and literature cited). However, inhumation burials cannot be distinguished only as Christian because the burial type appears already during the mid Iron Age (Cleve 1943; Lehtosalo-Hilander 1982a; Gräslund, A-S. 1985:298). This overlapping of burial rituals makes it

difficult to distinguish between the two inhumation burial traditions (Gräslund, A-S. 2002:44-45). Separating the burials from each other cannot therefore be done solely based on the burial custom. According to Müller-Wille, the supine position of the body should be considered to be a criterion to separate the burial customs from eachother (Müller-Wille 1993:10).

E-W orientation of the graves appears also as a Christian characteristic in graves (e.g. Lehtosalo-Hilander 1982a:19-21, 1997:395-398; Müller-Wille 1993:10; Purhonen 1997:375-377, 1998). In an ideal situation the deceased would be facing east as this was the direction from which Christ was expected to appear on the Day of Judgment. Therefore it has been maintained that an east-west orientation in itself suggests a Christian burial, but this is supported neither by the Bible nor by the early Christian Church (Gräslund A-S. 1992:201). The E-W orientation occurs also before Christianity (e.g. Theliander 2005:314-315), and very few late Viking Age inhumation graves in Scandinavia have a uniform orientation with the other graves. The typical "E-W orientation" is in fact from SW-NE orientated to WNW-ESE orientated. Different types of burial customs occurring on the same burial site can be traced to for example several different types of Christianity occurring on the same site in different time periods. Studies done on the Swedish sites Valsta and Skälby, Viking Age and early medieval period burial sites, come to the conclusion that there has been no uniform belief during the time of ca. 950-1100 AD (Andersson 2005:104, 148, 153). Thus, the orientation alone cannot be used as a criterion of a Christian burial, but it might indicate Christian influence (Gräslund, A-S. 1991:85).

Grave goods are considered to be a strong evidence for a pre-Christian burial. The term grave goods are often used to describe all kinds of artefacts found in a grave. But the goods can have different reasons for ending up in a grave (Gräslund, B. 1994:15). The grave goods are described to disappear in Christian graves because they were not needed in the afterlife. Grave goods, such as weapons, tools and vessels with food and drink are considered to be placed in the grave for the deceased (Gräslund, A-S. 1992:201; Müller-Wille 1993:10). Animals, such as horses and dogs, are thought to be of pre-Christian origins in graves (Gräslund, A-S. 1991:85). This means that food, weapons and especially animals are absent in the Christian burials (Kivikoski 1955:21; Sarvas 1971:52; Gräslund, A-S 2002:48). Food vessels can have been meant for the journey to the afterlife, but they may also be food offerings or ritual meals (Gräslund, B. 1994:16). Jewellery and dress details are often not considered to be grave goods but remains of clothing. Clothing does not give any reference to the beliefs of the deceased (O'Shea 1984:24; Gräslund, A-S. 1985:300; Gräslund, B. 1994:16). Objects could also be regarded as polluted or too personal to be used by someone else. These artefacts were disposed of by placing them in the grave (Gräslund, B. 1994:15-16). Cross pendants, on the other hand, are thought to reflect the Christian belief of its holder and are proposed to be evidence of Christian burials (see e.g. Cleve 1948; Kivikoski 1955; Salo, U. 1987, 1995; Makarov 1989; Purhonen 1997; Musin 1998; Petrukhin & Puskhina 1998).

Traces of the burial ceremony can be sometimes observed. The ceremonies might be different in pre-Christian and Christian burials. In pre-Christian burials animals could be part of the ceremony, while the animals were possibly replaced by candles in the Christian burials (Gräslund, A-S. 1991:85-86, 1992, 2002). As to the question of ritual meals it might not be possible to sepa-

rate pre-Christian burials from Christian, especially if the tradition continued.

Anne-Sofie Gräslund proposes that the earliest Christian burials are situated on the outskirts of the old burial fields. However, she speculates that in some places consecrated cemeteries might have appeared before the building of churches (Gräslund A-S. 1992:201). Müller-Wille, on the other hand, links burials to the vicinity of the churches, and the appearance of grave monuments with Christian content (Müller-Wille 1993:10, see also Kivikoski 1955:33). Ecclesiastical burials should also have a fence surrounding the graves (Kivikoski 1955:33; Hiekkanen 2003:157-160). The burials in the consecrated grounds are bound to a constricted area so the graves are forced to be on top of each other. The pre-Christian graves should instead have more space between one another (Nilsson 1996:365-366).

These characterizations are problematic considering the Finnish material. For example the closeness to a Church is difficult to prove, especially on the basis of the poorly studied rural material. Also grave monuments and such (wooden crosses etc.) are rarely found in the cemeteries. The absence of skeletal material also makes interpretations challenging. This has led to the practice that a pit dug in somewhat E-W orientation often seems to be sufficient proof of a Christian burial. However, by using these determinations we can get probabilities but not certainty of the nature of the graves (Gräslund, A-S. 1985:291).

5. The descriptions of the studied sites and the osteological material

The material used in this Master's thesis comes from six places in Finland covering both south-western and southern coastal sites and some eastern sites (see figure 1.). All of these sites are inhumation burials. The sites are documented in varied ways: three of the sites have been osteologically analysed before, and three of the sites I have analysed myself for this Master's thesis.

This chapter contains descriptions of the sites, their contexts and available bone material. The site descriptions follow the Finnish coast line from western to eastern Finland. The context descriptions are as accurate as they have been described in excavation reports and published material. The interpretations of the material will be discussed in chapter 6.

5.1 Luistari in Eura

5.1.1 Background and site description

Luistari is situated in Eura on the south-western coast of Finland (figure 1.). The site has Iron Age

burials and possibly medieval hamlet burials. A cairn and a dwelling place from the late Bronze Age-early Iron Age is also located on the site which indicates a long site continuity (Lehtosalo-Hilander 1982a:13).The site was found when the municipality of Eura started drainage works through the Luistari area in 1969 and a silver-ornamented sword was detected in the scoop of a digger. Archaeological excavations were conducted the same summer. The inhumation graves found during the excavations seemed to continue throughout a larger area. The investigations in Luistari were conducted between 1969 and 1992 and were funded mostly by donations (Lehtosalo-Hilander 1982a:7-8).

Luistari is published as a series of four books with different themes (Luistari I-IV, Lehtosalo-Hilander 1982a-c, 2000). The total excavated area is 6000 m² and there are more than 1300 inhumation burials on the site. Of these 436 are furnished graves and more than 800 does not contain any grave goods (Lehtosalo-Hilander 1997:389-390). Some of the graves were commingled which indicated that the burial place was in use for a long time period (Lehtosalo-Hilander 1982a:13).

This Master's thesis will concentrate on the graves discovered during the years 1969-1979. During that period, a number of 421 graves were investigated; 182 of the graves were furnished and 239 were unfurnished. Unfortunately, the excavation reports from the years 1969-1972 are missing from the archives of the National Board of Antiquity, so the information from the earliest years is mainly based on the *Luistari I*-book. The human bones from the later excavations were recently analysed, but the results are still unpublished. Before this only the human teeth and the animal bones had been examined (Blomqvist & Fortelius in Lehtosalo-Hilander 1982a; Salo, K. 2005).

5.1.2 Context and burial descriptions

The cemetery is situated partly in a field and partly in unused land (figure 2.). The field and unused lands looked about the same in 17th century as during the excavations (Lehtosalo-Hilander 1982a:8). The soil thickness in the field was 25-30 cm and it had a mixed layer of 10 cm concentrating to the northern parts of the studied area. The field was ploughed deeply, which had partly destroyed some of the graves (Lehtosalo-Hilander 1982a:8). The soil layers were thicker in the unused land reaching up to 100 cm but with an average of 35-40 cm. The thickest layers were presumably produced by trash disposal to the area (Lehtosalo-Hilander 1977, 1980, 1982a:8-13). Lehtosalo-Hilander describes the easternmost part of the site being destroyed during the straightening of the Eura-Uusikaupunki road in the end of the 1950s and the beginning of the 1960s. The road works seem to have damaged mostly unfurnished graves (Lehtosalo-Hilander 1982a:17).

The graves were for the most part dug into fine sand and silt. In the western part of the excavated area, the grave contours could be seen immediately after the surface layer was removed. The oldest graves, dated to Merovingian period and Viking Age, had a light brown colouring and the patches were large and rounded from the corners. Smaller, darker patches with varied shade were interpreted as being from a later time period because they were unfurnished (Lehtosalo-Hilander 1982a:17, 1997:390). In other parts Lehtosalo-Hilander described the soil to be completely mixed and the graves could be seen only near the bases (Lehtosalo-Hilander 1982a:13). The excavation was conducted by removing soil in layers from the whole area.

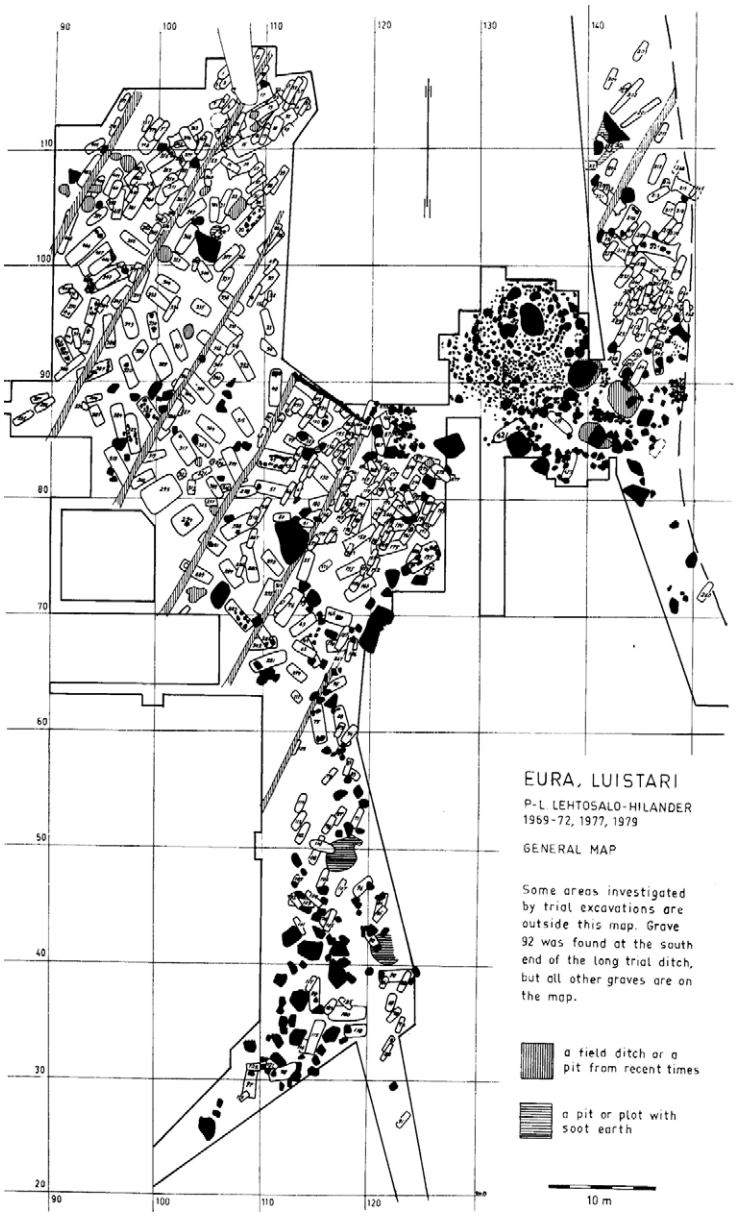

Figure 2. Map of excavated areas in Luistari 1969-1979 (Lehtosalo-Hilander 1982a:10).

The eastern and the central parts of the burial place seemed to be used the most since the graves were dug on top of one another. Superimposed burials could also be found amongst the northern burials. The burials could be distinguished quite early on because the filling was of mixed colouring containing dark surface soil, filling from older graves and white fine sand from the subsoil beneath the layers of yellow sand (Lehtosalo-Hilander 1982a:15, 25).

The graves were dated based on the grave finds. Of the furnished graves, Lehtosalo-Hilander has interpreted 36 to be from the Merovingian period and 117 from the Viking period. Most of the burials are single graves but in nine cases are there remains from more than one deceased. Six of these graves were dated to Viking Age, one to Merovingian Age and two to Crusade period (Lehtosalo-Hilander 1982a:13, 36). A ^{14}C-dating was done from the surface of grave 20 which gave a result referring to the 14th century. However, the grave was dated to the Merovingian

period based on its artefacts. It should thus be questioned what actually was radiocarbon dated. Lehtosalo-Hilander thinks it is probable that all unfurnished graves date to the 14th century (Lehtosalo-Hilander 1982a:15). No traces of a fence was observed around the unfurnished graves (Lehtosalo-Hilander 1997:400) which could have been a sign of Christianity (see discussion in chapter 4.6).

The orientation of the graves is in 68% of the cases SW-NE and in 16% of the cases the orientation is NW-SE. Other orientations occur but in insignificant numbers (figure 3.). The orientations that do not occur in unfurnished graves are E-W and N-S. The majority of the unfurnished graves are dug in SW-NE (78,5%) and in NW-SE (12,5%) orientation which are also the main grave orientations in furnished graves (Lehtosalo-Hilander 1982a:19).

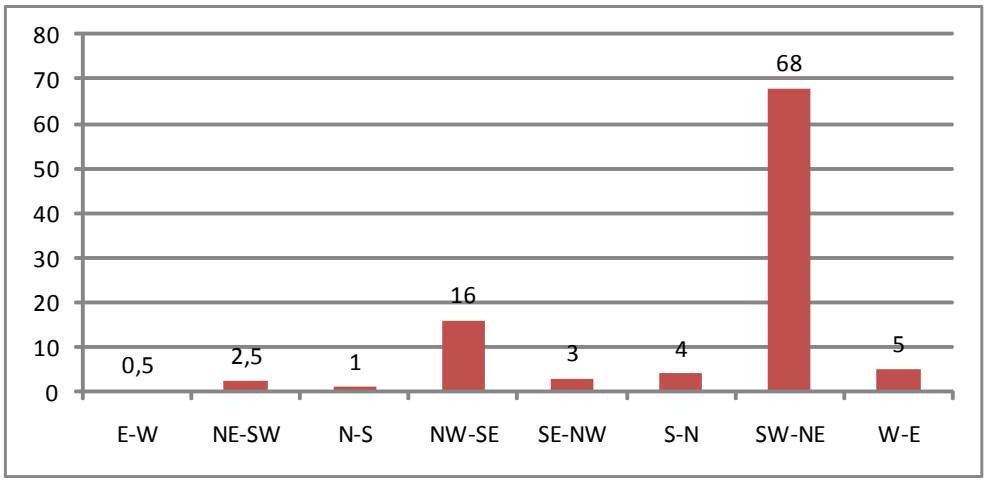

Figure 3. Orientation of the graves in Luistari.

Lehtosalo-Hilander describes the **stone settings** to be a typical feature in Luistari. The stones were often large cobblestones or red sandstone slabs firmly laid on top of the graves. The large size of the stones has probably prevented damages caused by later grave digging and ploughing. The settings could be of different size, form and located in different parts of the grave. The settings were most often found on graves with multiple burials and are more common in male burials than female or children. The total number of graves with stone settings is 141, 47 of them are from unfurnished graves (see more details in Lehtosalo-Hilander 1982a:21-25, 1997:392).

The grave pits from the furnished graves had mostly a rectangular **form** with rounded corners (Lehtosalo-Hilander 1982a:25). Lehtosalo-Hilander divides **the size** of the furnished graves into two groups according to their age. During the Merovingian period male graves oriented in SW-NE were about 3 m in length and 1 m wide with an even base at a depth of 70-90 cm. The grave pits in NW-SE direction were shorter; they had a narrower base and were about 10 cm shallower than the pits in SW-NE orientation. The female graves from the same period were shorter in length; SW-NE orientated 2,5 m in length and the NW-SE orientated about 2 m in length. The male graves seemed to be dug 10 cm deeper than the female graves. Under the Viking Age male graves were on average 300-350 cm in length and 100-130 cm in width. The graves were 70-90 cm deep. Over half of the female graves from the same period were over 250 cm long

and 80-100 cm wide. The most common depth for the graves was 60-80 cm (Lehtosalo-Hilander 1982a:26-27).

The unfurnished graves had a rectangular **form** with sharper corners than the furnished graves. The average length of the grave pits was 165-220 cm and width 50-70 cm, which makes the pits shorter and narrower in **size** than the furnished graves. Most of the pits were 70-100 cm deep. The deepest pits (over one meter) were found in the eastern parts of the cemetery, where the surface layers were considerably thicker than in the other areas. The base of the pits was apparently even (Lehtosalo-Hilander 1982a:25, 30).

Lehtosalo-Hilander divides unfurnished burials into two groups: the form, size and the depth are the same in the first group as is with the furnished graves. They are also located in the central part of the burial ground in connection to the furnished graves. The pits in the second group are narrow and deep with a strongly mixed filling (Lehtosalo-Hilander 1982a:13). Lehtosalo-Hilander ascribes these graves to a later date than the furnished graves, mostly because the graves were dug through or on top of the furnished graves. The location of these graves is also on the edges of the burial place (Lehtosalo-Hilander 1982a:13, 1997:392).

Wooden constructions in graves are divided into four types by Lehtosalo-Hilander: coffins, post holes, possible stretchers and chambers. Traces of coffins occur in both furnished and unfurnished graves; however, traces of wood are more distinct in the furnished graves. The other three types of wood constructions occur only in the furnished graves. **Coffin** constructions are present in a few graves. In some cases are there even coffins with handles for carrying the coffin (Lehtosalo-Hilander 1982a:30-32). Lehtosalo-Hilander speculates that the few nails found in graves were used to nail the lid to the coffin. The coffin itself was probably built without irom nails. **Post-holes,** extending below the grave base, have been found in six graves all in the northern part of the burial place (Lehtosalo-Hilander 1982a:32-33). Lehtosalo-Hilander interprets these as a roof construction supported with posts. Rectangular formed graves with “arm like extensions toward the sides at one or both ends” were also found in the same area. These graves bore traces of wood (ibid.). Traces of **possible stretchers** are found in perhaps four of the graves, although, two of the graves had indications of containing a coffin. Remains of wood on the sides and on the base of the larger grave pits were interpreted to be some sort of **chambers** (Lehtosalo-Hilander 1982a:27, 30, 33-35).

Lehtosalo-Hilander classified the tools, clothing, vessels, slag and remains of animals as **grave goods** (Lehtosalo-Hilander 1982a:37-41). However, as already stated in chapter 4.6, is clothing probably not part of the grave goods. Slag and animal remains could be found also in the unfurnished graves. In furnished graves **weapons** such as spears, swords, axes and arrowheads were found, spears being the most common (in circa 66% of the graves). **Tools** (most often knives, bits of flint and weights) were found in over 60% of the male and female graves, most often deposited near the waist in the male burials. The objects found in the vicinity of the waist had often been in a leather pouch affixed to a belt. Clay **vessels** were found throughout the burial site with some variation in density. The vessels were mostly placed in the graves with other artefacts. In seven graves were vessels found near animal bones. Also the surface layer contained some

potsherds (Lehtosalo-Hilander 1982a:38). Lehtosalo-Hilander thinks that the potsherds originate from destroyed graves or from the previous Bronze Age dwelling site (ibid.). The ornamentation in Bronze Age pottery and Iron Age pottery should, however, be differentiated from one another. The vessels were not, according to her, placed on top of the graves. The filling of Viking Age furnished graves and unfurnished graves contained **slag** in nearly the same ratio. The slag was, in Lehtosalo-Hilander's opinion, intentionally placed to the filling (Lehtsalo-Hilander 1982a:38, 41).

Out of the 421 graves excavated in years 1969-1979 there are 91 graves with **animal remains**. From the 91 graves 62 were furnished and 29 were unfurnished (figure 4.). Animals occur most frequently in male burials from Viking Age. Animals were not found in graves dated to the Crusade period but can be found in unfurnished burials. Lehtosalo-Hilander has dated these burials to a later period than the Crusade period. Based on figure 4. animal bones seem to be present throughout the burial ground.

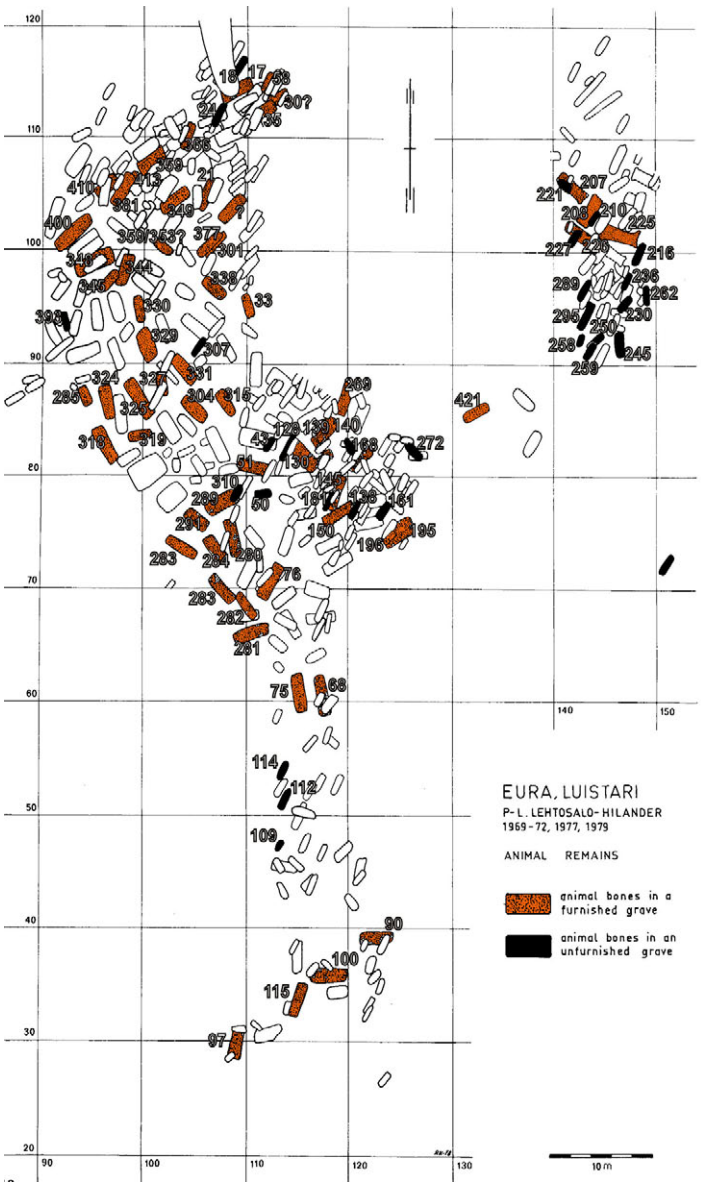

Figure 4. Map of graves where animal bones were found (Lehtosalo-Hilander 1982a:40, numbers and colour by the author).

Lehtosalo-Hilander dates 20 of the unfurnished graves with animal remains to the last period of use of the burial place. A coin from 1565 (reign of King Eric XIV) was found from grave 161 along with a horse skull and a humerus, and teeth of domestic pig. The bones and the coin were situated 40 cm from the base of the grave. It is possible that the coin dates the graves but this is uncertain. Some potsherds were also recorded from the filling (Lehtosalo-Hilander 1982a:15). In Lehtosalo-Hilander's opinion, the burials to the cemetery shoud have ended before the mid 16th (ibid.).

5.1.3 Osteological material

Lehtosalo-Hilander writes that the bones were generally poorly preserved and that the animal bones were only in a slightly better condition than the human bones (Lehtosalo-Hilander 1997:392). Human teeth and animal bones were analysed from the excavations during the years 1966-1979. Kati Salo has studied human teeth from Luistari for her Master's thesis (2005), and Leif Blomqvist and Mikael Fortelius analysed the animal bones which were published in the first Luistari book (Lehtosalo-Hilander 1982a). Ulla Tupala covered interpretations of the animal bones in her Master's thesis (1999).

The age, sex and height of the deceased were determined by the size of the grave pit and artefacts in the graves. Lehtosalo-Hilander emphasizes this method because the bones are too poorly preserved. Osteological analyses have therefore rarely been available (Lehtosalo-Hilander 1982a:13).

On the grounds of artefacts and dress details **the sex** of the deceased from the furnished graves was identified as follows: at least 63 male, five probably male, 48 female, 16 probably female. Child burials occur in 34 single graves and in five multiple burials (Lehtosalo-Hilander 1982a:25-26). Kati Salo supports the **Minimum Number of Individuals** (MNI) in most of the interpretations made by Lehtosalo-Hilander. Teeth from two individuals were found in five single graves. Extra teeth that were found in some cases belong to another grave. This was probably caused by later grave digging. Six of the burials initially thought to be multiple, contained only one individual and three had two individuals. The dental material shows 94 individuals present in 86 of the studied graves (Salo, K. 2005:12-13). Lehtosalo-Hilander used only adults and children as **age** groups (Lehtosalo-Hilander 1982a:13, 26, 36). Childrens graves seem to be estimated by the length of the bone remains in the grave-pit, length of the grave or length of the coffin. The large number of children's graves is, according to Lehtosalo-Hilander, a sign of epidemics and diseases during the Late Iron Age (Lehtosalo-Hilander 1982a:36). **The height** of the deceased was estimated by the size of the grave-pit and the possible coffin. In some cases were estimations of the height of the deceased done in field. These estimations showed that the deceased were over 169 cm long (Lehtosalo-Hilander 1982a:25-26, 37).

The animals identified in the analysis are cattle (*Bos Taurus*), horse (*Equus caballus*), dog (*Canis familiaris*), domestic pig (*Sus scrofa domesticus*), bovids (Bovidae sp.), goat antelopes (Caprinae

sp.) and water vole (*Arvicola terristris*) (Lehtosalo-Hilander 1982a, appendix II: 309-310). Goat antelopes are in this case most likely sheep (*Ovis aries*) or goats (*Capra hircus*). Teeth (dentes) occur most frequently in the material (table 2.) and can be found of the following species: cattle, dog, pig, bovids and sheep or goat. Teeth can also be found in context with other skull (cranium) parts. Cattle have mostly teeth (with skull parts) preserved but also ribs (os costae), vertebra, scapula and tibia were found. Long bones (ossa longa), such as femur, humerus, radius and ulna are bones that were preserved of the horses. Dog remains were mostly teeth and parts of the skull but in two occasions are also long bones preserved. The most frequently found sheep or goat bones are teeth, but radius was uncovered from one grave. In another grave, were several sheep or goat skeletal parts found, indicated that two individuals were buried there possibly at the same time.

Table 2. The frequency of animal bones and species mentioned in the analysis (based on Fortelius & Blomqvist in Lehtosalo-Hilander 1982a:309-310).

Bone	Bos taurus	Equus caballus	Canis familiaris	Sus scrofa	Bovidae sp.	Caprinae sp.	Arvicola terristris	Total
costae and vertebra	1							1
cranium			1					1
cranium and dentes			1				1	2
cranium and mandible with dentes			1					1
cranium and maxilla with dentes	1							1
cranium, dentes and ossa longa			1					1
cranium, mandible, humerus		1						1
dentes	29		7	2	12	19		69
femur		1						1
humerus		1						1
mandible and dentes	1		1					2
maxilla and mandible with dentes			1					1
maxilla with dentes				1				1
metatarsale		1						1
radius		1				1		2
scapula	1							1
several skeletalparts, at least 2 indiv.						1		1
tibia	1							1
ulna		1						1
vertebrate, coxae and ossa longa			1					1
Total	34	6	14	3	12	21	1	91

The total number of uncovered animal bones are 98, and 34 of them occur in unfurnished graves (table 3.). All of the animal bones in unfurnished graves are interpreted to be from the filling (appendix 2.), although this might be because no human remains have been found, so the base of the grave has been treated as filling unlike in the furnished graves.

Table 3. Shows the frequency of animal species in graves from different periods in Luistari (Lehtosalo-Hilander 1982a:39).

Period	Sex	Horse	Cattle	Bovids	O/C	Pig	Dog	Other	Undet.	Total
Merovingian	M		6		1	1			1	9
	W			1	3				1	5
Viking	M		16		1		7+1?	1	2	27+1?
	W		2?	3	6		1		2	14
	C		1		1					2
	D				1		2			3
	?				1		1			2
Crusade	M/W						2			2
Unfurnished		6	11	5	7	2			3	34
Total		6	36	9	21	3	13+1?	1	9	98

Animals are interpreted as being part of the grave in 38 cases, dogs in 14 graves and meat producing animals (such as cattle, sheep, goat and pig) in 24 (figure 5.). Dogs are always interpreted to be from the grave even though they could be documented to the filling (figure 5. and appendix 2.)Graves from Merovingian period seem to have the smallest amount of species (table 3.) and Viking Age graves the most. Animals are more often found in male graves. Dog bones are found in Viking Age graves and possibly in two graves from the Crusade period. No other species are found from the Crusade period graves. Cattle and dog remains are most frequent in male graves, dogs being absent from the graves of children. Sheep and goat bones are most often from female graves.

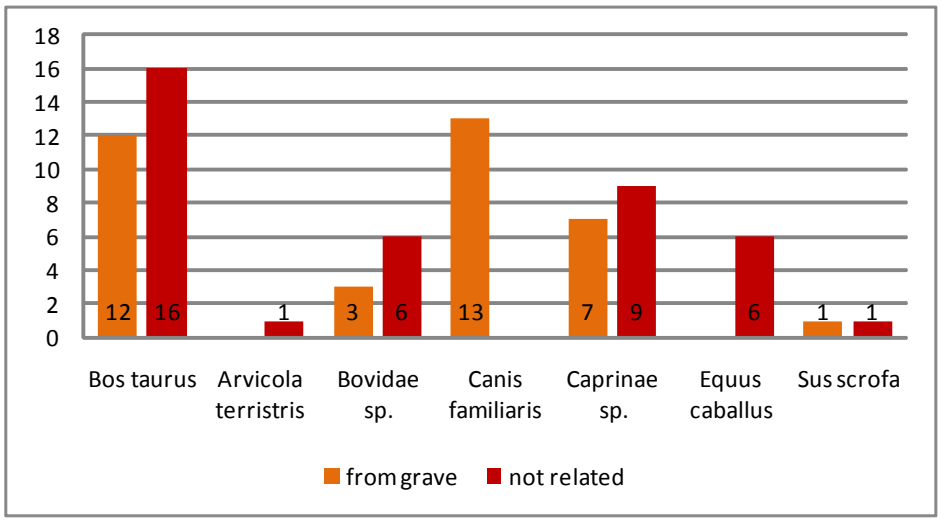

Figure 5. The quantity of animal bones in graves interpreted to be from the grave and the bones not related to the bones, according to Tupala (1999).

Most of the animal remains are interpreted to be unrelated to the graves (figure 5.). **The water vole** remains were interpreted as a modern specimen thus not belonging to the original grave context. **Horse** remains were found in six unfurnished graves and five of them were interpreted to derive from in the filling (table 3. and figure 5.). On the other hand, the horse bones and the coin found in the filling of grave 161 were interpreted to belong to the grave (Lehtosalo-Hilander 1982a:15, 154-155). Most of the meats producing animals are also thought not to be related to the graves.

Dogs are found in thirteen graves (table 3.). Most dogs derive from the Viking Age burials. Two graves with dogs are possibly from the Crusade period. In grave150 dog bones were found at the foot end of the coffin and in the filling, probably near the head but nonetheless outside the coffin (appendix 2.). According to Lehtosalo-Hilander, eight of the dogs were located in male graves (Lehtosalo-Hilander 1982a:38). Female burials with dog remains were few in Luistari, only two. In one female grave the dog was on the right side of the deceased near the waist. Dogs were placed in the foot end of the grave in seven cases and twice near the femur. In one of the graves was the dog remains placed next to the shoulder (Lehtosalo-Hilander 1982a:38).

Cattle bones were found in 36 graves, of which 21 were from furnished graves (table 3.). The bones where treated as belonging to the grave in thirteen furnished graves. There were five unclear cases and in three cases were the bones thought to have no relation to the grave. The bones which were considered to belong to the graves were found together with artefacts or the deceased. The bones thought to be unrelated were from the filling or in 'too good' condition to be from the Iron Age. In areas were other graves are dug through each other are the contexts mixed and thus unclear. In such cases the determination of which finds belong to the filling and which to the grave is problematic. Cattle bones were present in eight chamber graves and in five graves with other wooden constructions (Lehtosalo-Hilander 1982c:29). In the unfurnished graves number 227 and 393 the cattle bones were found in the foot end of the grave (Lehtosalo-

Hilander 1982a:41). However, Ulla Tupala suggests that these cases are not related to the graves (Tupala 1999 appendix 8:7, 14). The NE end of the grave 227 was dug on top of grave 226 and the skull bones were found in the filling. The bones are described as being in good condition. The NW end of the grave 393 was located on top of grave 394, and thus the enamel fragments found in the filling were not related to the grave in question (Lehtosalo-Hilander 1982a:275; appendix 2.).

Sheep or goat bones were found in 21 graves, six of them in Viking Age female burials and seven in unfurnished graves (table 3.). Lehtosalo-Hilander suggests that smaller animals, such as sheep and goats, were buried in female burials and larger animals, such as cattle, were buried with men (Lehtosalo-Hilander 1982c:30). Grave 260 was unfurnished but still contained sheep or goat bones from two individuals and had an irregular form. The grave was according to Lehtosalo-Hilander sitiuated on wasteland. (Lehtosalo-Hilander 1982a:179-180). **Pig** was found in one Merovingian period male burial and in two unfurnished burials. The Merovingian period grave was disturbed by later grave digging. In the middle of the grave the remains from the lower jaw (mandible) of a pig was found close to some artefacts. The upper jaw (maxilla) of a pig was also found in the filling of grave 112. According to Lehtosalo-Hilander's descriptions, the condition of the bone was such that it did not belong to the grave context. The grave was also situated in the wasteland area (Lehtosalo-Hilander 1982a:120). Pig teeth were also uncovered in grave 191 together with a horse skull.

5.1.4 Previous interpretations of the animal bones in Luistari

Animal bones (mostly teeth) found in the filling of the unfurnished graves can have three explanations, according to Pirkko-Liisa Lehtosalo-Hilander. Firstly, the bones could belong to a dwelling place from a nearby site. Secondly, the bones could come from a burial which was destroyed. Thirdly, the bones could be part of the burial and therefore a continuation of a Viking Age tradition. However, animal bones were not found in graves dated to the Crusade period. Because of this Lehtosalo-Hilander thinks it is unlikely that the tradition of placing animals in graves continues after the Viking Age (Lehtosalo-Hilander 1982a:39). Tupala doubts that the teeth are part of the burials and suggests that the teeth have ended up in the ground by chance or due to ploughing activity. Tupala emphasises this possibility because the burial ground was used as a field before the excavation started (Tupala 1999:40).It is nearly impossible to evaluate the context of these bones because Lehtosalo-Hilander and Tupala neglect to describe the quality of the surrounding soil and the quality of the soil in the graves. There seems to be a tendency of overlooking the importance of finds found in the grave fillings especially when bone material was not what was expected.

When looking closer at Tupala's interpretations (appendix 2. and Tupala 1999:38, 42) it becomes clear that when the animal bones are found in the filling of the unfurnished graves the bones

are thought to be unrelated to the grave. In furnished graves where the deceased or some artefacts were found, the same animal species were interpreted as food for the dead. In the case of unfurnished graves were the remains of the deceased are not found, the animal bones, even if found at the base of the pit where the deceased would have been laying, the interpretation is still that the animals are unrelated to the burial. Also bones that seemed to be quite complete were treated as modern.

5.2 The Church of the Holy Spirit in Turku

5.2.1 Background and site description

The Church of the Holy Spirit (also known as the plot of Julin, fi. *Julinin tontti*) is situated in the centre of Turku (figure 1.). Turku was populated as a town already in the 13th century and the modern city center contains old town remains. The plot of Julin was trial excavated in 1964 to seek for the location of the house of the Holy Spirit and a later church (Laaksonen 1965:27). The house of the Holy Spirit is first mentioned in 1396 (Pihlman 1992:60). Such houses were used for the poor, unemployable and uncontainable sick people during the Middle Ages (Sandholm 1973:17-18). During the years 1568 and 1569 18 people were lodged in the house. At least during the 16th century the house had its own cemetery (Pihlman 1992:60). In 1578 the cemetery was decided to be free of charge and that the house was to be restored. This enabled the poor and the lowborn to be buried there (Pihlman 1992:60 and literature cited).

The church of the Holy Spirit can be seen in the first maps of Turku circa 1634 drawn by Olof Gangius (figure 6.). The building of the church started already in 1588 by the order of John III (fi. *Juhana III*). The purpose was to build a church for the Finnish speaking population of Turku and leave the cathedral of Turku for the Swedish speaking population (Kykyri 1987:25). It is not clear from the letters of John III where the church was supposed to be build and under what name. Based on the records from the castle of Turku, the church was built during 1588-91. The church was then in 1593 damaged in a fire (Pihlman 1992:61 and literature cited) and apparently never finished. During the 1630s a grant was given for a three year period for finishing the building, however, already in the 1650s the church was partly demolished because a new street plan was to be drawn over the church (Pihlman 1992:61 and literature cited; Kykyri 1987:25).

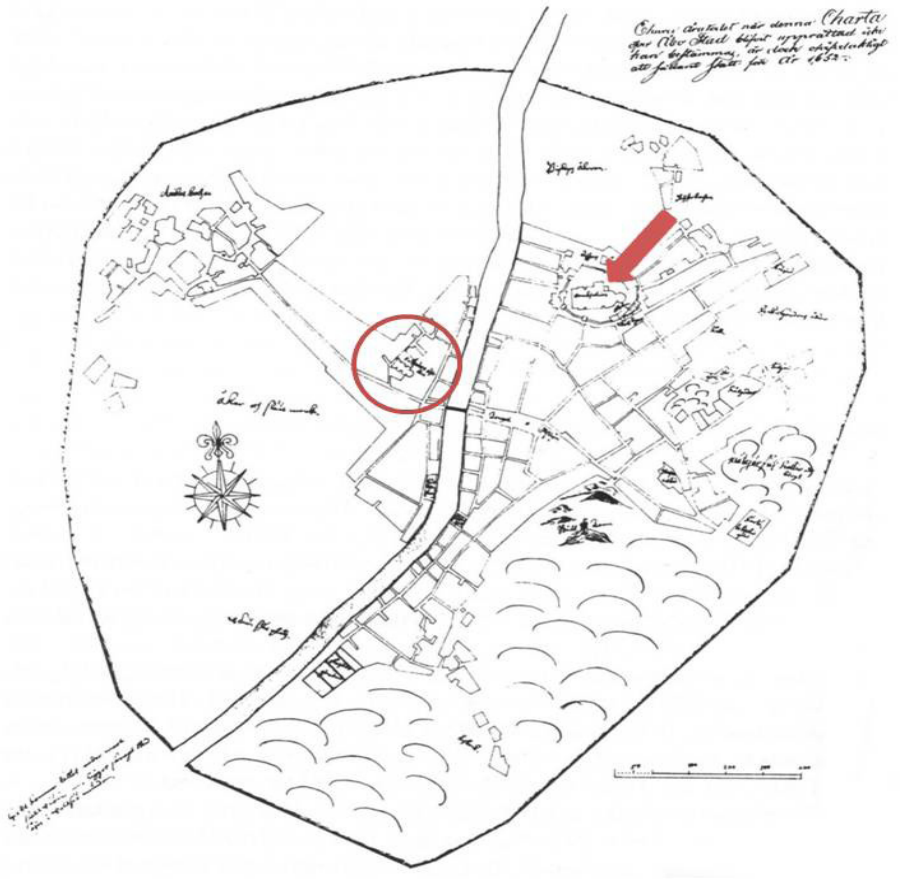

Figure 6. Map of Turku in 1634 by Olof Gagnius. The Cathedral of Turku is shown by the arrow and the church of the Holy Spitir is circled (Pihlman1992:62 modified by the author).

In 1983 an office building was planned to be built on the plot, and archaeological investigations started. The excavated areas being 18 2x2 m squares and a longer trench were planned to contain the foundation poles for the building (Laaksonen 1984; Kykyri 1984:12). The excavations continued also during the next two years. The developers' original plan changed in 1984 and the excavated area expanded to cover circa 80% of the plot, that is to say 2350 m² (figure 7.). The excavated area expanded so that the northern wall of the Church of the Holy Spirit was investigated and partially also the southern graveyard. The examined graveyard area was circa 80 m² in size. Graves from underneath the church were excavated parallel with the graveyard. The graves underneath the church floor covered an area of over 100 m². The total excavated area containing graves was about 200 m² (Laaksonen 1984). Skeletal remains from over 600 individuals were uncovered during the excavations. The test excavation produced material from 81 individuals. The excavations from the years 1983-1985 revealed additional 532 bodies. The burials were mostly inside the church walls in up to 8 layers (Kykyri 1987:25).

In the Archives of the National Board of Antiquity there are only preliminary excavation reports from the excavation. Maps from the 1964 year excavation are unavailable and the drafts of the maps from 1983-1985 are filed in the Turku Castle. The excavation material is discussed in four articles. Osteological analyses are available on the skulls and teeth (e.g. Varrela 1996).

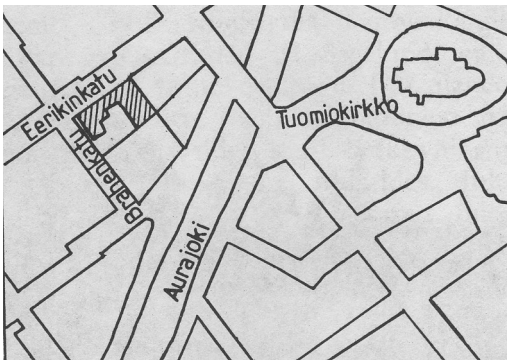

Figure 7. Map of the center of Turku where the excavated area is markes with diagonal lines (Kykyri 1984:12).

5.2.2 Context and burial descriptions

In the preliminary report from 1985 excavated areas were numbered from 9 to 13 (figure 8.). Area 9 is the old *Brahenkatu* -street which goes right-angled to the centre of the plot. The size of the area is approximately 70 m² and contains mostly street layers and remains of wooden buildings. Area 10 is regarded to be the site containing most untouched burials. The area consists of burials underneath the church floor in the NE side of the old street Brahenkatu, between and partly underneath an outhouse in the border of the plot. The size of the area is circa 80 m². Area 11 contains burials underneath the church floor and it is situated under the old street Brahenkatu. The size of the area is roughly 100 m². The areas 12 and 13 have also burials underneath the church floor (Laaksonen 1985).

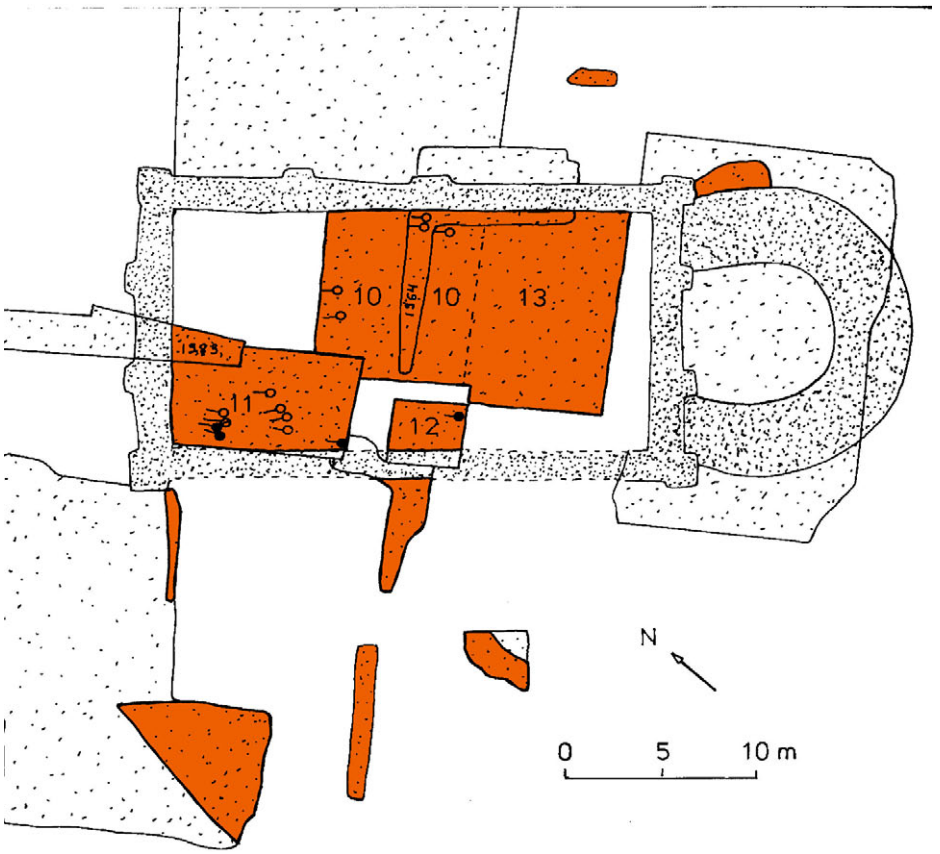

Figure 8. Map of the excavated area near the church of the Holy Spirit from 1985. The coloured areas are documented and the lightly dotted areas were excavated (modified by the author from Pihlman 1992:64, 68).

In 1985 diggers were used during the excavation of the NE border on the plot of Julin. The upper layers were removed by the machine under the surveillance of an archaeologist. The top of the burial remains inside the demolished church were cleaned/ refined by hand, documented (oral descriptions, photographs and drawing) and the bone material collected. In areas 10 and partly in area 11 the graves were excavated by hand in 5-20 cm layers. The documentation of the remains was also done in layers (Laaksonen 1985; Kykyri 1985). The documentation layers are described to form naturally based on the location height of unearthed coffins and skeletons (Kykyri ibid.). Concerning the documentation, Sirkku Pihlman writes that the lowest graves inside the church were rarely documented. The lowest graves in areas 11 and 13 were dug by a digger and the skeletons were recovered without any detailed documentation. Pihlman continues by noting that only the topmost burial layers inside church were documented inside the church in other areas (Pihlman 1992:64 and cited).

The cemetery soil is described to be sandy clay mixed with crushed bricks, plaster and coal or soot. In 1964 an earth layer was noticed under the 4th layer. In the 1985 report a thin sandbed is described in the layer 6/7. Under these layers burials are described to continue. The layers mentioned in the documents from 1964 and 1985 are probably the same. Under the sandbed the soil changed to be more clayey and homogen. The individuals buried in this layer had no coffins. . The lowest burials remained unexcavated and undocumented because of lack of time. The lowest burials had the clearest outlines (Kykyri 1985). The burials on top of the sandbed were regarded as being the top burial layer and the burials under the sandbed as the lower burials (Pihlman 1992:66). The excavation leader Lasse Laaksonen interpreted the topmost layers to derive at the earliest from 1590 and at the latest from mid 1600. The lowest layers (under the earth layer) he dated to 15th-16th centuries and to the chapel graveyard of the house of the Holy Spirit (Laaksonen 1965:33).

The Church of the Holy Spirit was built in NW-SE orientation. **The orientations** of the graves in 1964 excavations were in NW-SE orientation and in W-E orientation (Laaksonen 1964). Also the lower burials inside the church were buried in NE-SW orientation (Kykyri 1987:25). From the 1980's excavation maps Sirkku Pihlman has observed that burials in NE and some of the graves SW from the church followed the lines of the church walls. In SW of the church were burials in clear W-E orientation (Pihlman 1992:63-63).

The size and form of the graves is not documented in the preliminary excavation reports. By looking at the pictures in the publications the soil in the top layers seemed to be quite mixed and grave pits were undistinguishable. Only the outlines of the coffins or other wooden constructions were recognised. The burials below the sandbed are described to have clearer outlines but there are no written descriptions available.

According to Pihlman, the deceased are mostly laying on their backs with their arms over the abdomen or chest. **Coffins** or other **wooden constructions** are detected in circa 15% of the burials outside the church (Pihlman 1992:72). Kykyri professes that over half of the deceased were buried inside the church in coffins. Coffin burials were the most common in layers above the sandbed. **Wooden stretchers** were found in some occasions. Under the sandbed the deceased

were buried without coffins or other wooden constructions (Kykyri 1987:25). The occurrence of wooden constructions was difficult to sort out because of the lack of documentation (Pihlman 1992:72).

Grave goods, such as money, were seldom found in these graves. One bronze ring was found in the left middle finger of an individual and a knife with another individual. A textile coin pouch was uncovered near one skeleton. The coins inside the pouch were dated to 1582-1635 (Kykyri 1987:26-27; Pihlman 1992:73). Only one button, a belt buckle and some textile remains could be identified as part of **clothing** (Kykyri 1987:26).

Animal remains are not described in the documentation. The animal bones were perhaps not recognized from the human bones or alternatively the animal bones were regarded as uninteresting.

The first interpretation of the burials was done in 1964. The burials outside the church walls were thought to be medieval because the burials were in W-E orientation as opposite to the burials inside the church with the same NE-SW orientation as the church walls had (Laaksonen 1965:32-34). After the 1985 excavations the burials inside and outside the church with NE-SW orientation were dated to the time the church was in use because of the orientation and the height of the graves (Kykyri 1985, 1987:25-26; Pihlman 1992:63-68). Sirkku Pihlman speculates that the soil in the top layer in the church could be brought from somewhere else in order to make room for more burials under the church floor. The graves under the sandbed are in the same level as the burials outside the church. This would explain the two separate burial phases (Pihlman 1992:66).

5.2.3 Osteological material

The osteological material consists of over 600 human individuals. The numbers of individuals was recorded mostly by the number of skulls found. According to Kykyri, every intact skeleton and stray skull find was numbered. If a stray skull find could be identified to belong to a headless remain, the skull and the remains were counted as one. Also mandibles were numbered as one deceased if they could not be identified to belong to another deceased. Empty coffins and bunks, and fragmentary skeletal remains were numbered as a deceased. This would mean that every half a skeleton would have an own number (Kykyri 1985). Because of the numbering principles one should take the count of the deceased with some reservation.

An analysis and publication is available of the human skulls and teeth (e.g. Varrela 1996). Kati Salo's analyses of the human remains are still unpublished. No animal bones are described in the documentation of the graves, although, remains of animals were found during Salo's analysis. The bones discussed in this study are a sample of those found in the study of human remains, and are analysed by the author.

The sex and age estimations were based on the skulls. Varrela could identify 68 women and 56 men in the material of 381 individuals. From the material, circa 25% were children. In all areas

half of the individuals were between 21-40 years (Pihlman 1992:69-70 and literature cited). One reference to **the height** of the deceased could be found in Marita Kykyris article (1987) where she describes that based on the 1964 bone material the average height of a women in Turku was 154 cm and 168 cm for men (Kykyri 1987:27).

The field interpretations of the possible graves were done by non-osteologists. Hence have these interpretations caused false grave features. An example of this can be seen in Kati Salo's analysis were one of the graves (257) has a upper torso from a teenager and the limbs from at least two adults a child and an infant was also found in the analysis along with animal bones (Salo, K. 2010). The lack of detailed field documentation makes the results of the bone and context analysis debatable.

The **animal bones** are from a random selection of grave deposits from the 1985 excavations. The bones derive from 46 graves but there are a selection of stray bone finds which are probably found between the graves or from the area (9-13) in certain layer and square. Area 9 has mainly stray bone finds from layer two not belonging to any grave (appendix 3. table 4.). From area 10 the bones derive mostly from graves but loose bones are also found from layer two and six. In area 11 bones are found from graves 1 and 11. One loose bone is from area 13 and bones from grave 30 from an unknown area are also present (Kivikero 2010c). It is difficult to know wheatear or not the bone originated from actual graves as the sampling was not the best possible. In the following description of the material I have treated the material as derived from liable graves but bore in mind that this might not be true.

There are 260 animal bones in my material. The species found from the site are cattle, domestic pig, sheep, goat, mountain hare (*Lepus timidus*) and northern pike (*Esox lucius*). Bones that could not be identified to species where of bovid, carnivore (Carnivora sp.), fowl (Galliformes sp.), perciforms (Percidae) and larger groups, such as, large ungulates (Mega ungulate), medium sized ungulates (Meso ungulates), large and medium sized mammals (Mega and meso mammalian) and mammals (Mammalia) and birds (Aves sp.). Large ungulate bones are most likely cattle bones but they can also be horse or elk bones. Sheep, goat and pig fall into medium sized ungulates. The **Minimum Number of Individuals** is one with the pig, goat, mountain hare and carnivore and two with cattle, sheep and sheep or goat (Kivikero 2010c).

The age could be estimated from thirteen cattle bones, two pig bones, one sheep and six sheep or goat bones (appendix 3. figure 9.). Age could also be estimated from ten large ungulate and one large mammal bones. The cattle were mostly over 12 to 18 months of age, two bones indicating an individual over 4,5 years. One bone was from an individual under 5 years. Age estimates from pig could only be made from two bones; one over 1 year and the other under 3,5 years of age. Sheep or goat bones belonged to individuals roughly over 10 months and under 3,5 years. One sheep bone could be estimated to belong to an individual less than 10 months old. The large ungulate bones had a tendency of being under 5 years of age (Kivikero 2010c). Meat producing animals are often slaughtered earlier than animals kept for milk or wool production. It is possible that sheep, goats and pigs were slaughtered earlier than cattle but the material is too small to make any conclusions.

Cut marks were observed on ten cattle, pig, sheep and sheep or goat bones (table 5.). Also large ungulates and mammals showed marks indicating **butchery**. The marks appear on vertebra, long bones, rib bone, hip bone and scapula. The cutmarks indicate the use of an axe. The places of the cuts are logical for cutting the animal into smaller pieces (Kivikero 2010c). Wheather or not the animals were slaughtered for own use or for sale is difficult to determine on such a small sample. Rodent **gnaw marks** were found on one sheep metatarsal. Gnawing is often linked with the disposal of the bones, the bones being left unburied and available as food.

Table 5. Place of cutmarks on bones from the site of church of the Holy Spirit. The bones are listed according to species.

Species/ Family	Butchery/gnaw	atlas	costae	coxae	humerus	mc	mt	radius	scapula	v.cervicale	Total
Bos taurus	cutmark prox.							1			1
	cutmarks cavitas glenoidalis								1		1
	cutmarks dist.cond.				1						1
Sus domesticus	anterior cut surface									1	1
Ovis aries	diaf.cutmarks+dist.gnaw						1				1
	fac.auric.cutmark			1							1
O/C	cutmark caudalt	1									1
Megaung	cutmarks diaf.					1					1
	cutmarks in the root of caput		1								1
Mega-mam	cutmark									1	1
Total		1	1	1	1	1	1	1	1	2	10

Cattle bones were identified in 28 graves in areas 9, 10 and 11 (appendix 3. table 4.). Cattle bones are the most frequently (17%) found animal species in the graves. Only large ungulates and unspecified mammals are found more often. The graves seem to have one or two cattle bones each, but in grave 11 in area 10 there are four cattle bones and in area 11 grave 1 five bones (Kivikero 2010c). If the deceased was placed in the grave without a coffin, the actual grave might be difficult to detect.

Cattle bones are mostly represented by teeth, forelegs and phalanges (table 6.). From areas 9 and 11 the bones are of phalanges and posterior limbs. However, all the anatomical parts are represented in area 10 which often indicates that the animal was slaughtered on the site. Large

ungulate and mammal bones are often of vertebra and long bones, although, also parts of skull were present. Abnormal changes were found on three cattle bones. The cattle showed signs of depressions in articular surfaces of the first or second phalanx. From area 10 grave 7 one cattle first phalanx had type 2 depressions and another in grave 33 a type 1 depression in the second phalanx. In area 11 grave one cattle second phalanx had type 2 depression. The depressions are unlikely to be pathological but are occasionally noted on cattle (Kivikero 2010c; Baker & Brothwell 1980:109).

Table 6. The anatomical representation of bones in Turku. The numbers on the top row represent anatomical parts of the animals. The key for the numbers is shown in appendix 4.

Area	Species/Family	0	1	2	3	4	5	6	7	8	9	11	16	4?	Total
9	Bos taurus		1												1
	Ovis aries						1								1
	Megaung						1								1
10	Bos taurus		1	7	2	10	5	1	4	7	1				38
	Sus domesticus				2	1	2	3							8
	Ovis aries					1	1		1						3
	Capra hircus					1									1
	O/C		3	2	5	6	6		3	1					26
	Lepus timidus								1	1					2
	Bovidae			1											1
	Carnivora						1								1
	Megaung	2	4		23	3	10		2		1	5			50
	Mesoung				5										5
	Megamam		7		8	1	3					13			32
	Mammalia	47	1		7							11			66
	Galliformes sp.					1									1
	Aves sp.								1						1
	Esox lucius				1										1
	Percidae												1		1
	indet.	3													3
11	Bos taurus						1		1	3					5
	Sus domesticus			1											1
	O/C						1								1
	Megaung				1										1
	Mammalia	1	1		1							1		1	5
13	Sus domesticus		1												1
?	Mammalia	2										1			3
Total		55	19	11	55	24	32	4	13	12	2	31	1	1	260

Sheep and/or goat bones were found in areas 9, 10 and 11 (appendix 3. table 4.). Sheep or goat is/are the second most frequent (12%) animal species in the graves. In area 10 graves 3 and 72 have three sheep or goat bones, in all of the other graves there are fewer than three identified bones. The sheep and/or goat bones are anatomically evenly distributed (table 6.); a slight increase of vertebrate and limb bones can be detected. Wrist (os carpi) and ankle (os tarsi) bones were not found in the sample (Kivikero 2010c). The animals might be slaughtered on site and the wrist and ankle bones were distributed somewhere else than the sample area.

P**ig** bones were observed in areas 10, 11 and 13 (appendix 3. table 4.). In area 10 pigs were present in eight graves. Only in grave 1 from area 10 there are more than one. Teeth were found only in area 11, otherwise pig bones are from the vertebra, long bones and ankle bones (table 6.). The skull bones and phalanges are absent in area 10. This can mean that they are somewhere else in the site or that the bones are completely absent. If they are absent, it means that only the limbs have been treated on the site. Area 11, where the teeth were found, and area 13 where a piece of skull was detected, forms a too small sample for wider interpretations. One talus bone (astragalus) in grave 5 (area 10) had exostos-like overgrowth in bone often observed on cattle (Kivikero 2010c; de Cupere *et al*. 2000).

Mountain hare metacarpal and phalanx were found in area 10 in graves 3 and 26, and one carnivore tibia shaft (diaphys) in grave 40. In area 10, also other bones than mammal bones were found. **Birds** are found in graves 26 and 38 (fowl), and **fish** (Pisces) in graves 47 (pike) and 51 (perciform) (Kivikero 2010c). All these bones should be treated as single cases. They only indicate that mountain hare, fowl, pike and perciforms were handled on the site but nothing more extensive.

The largest number of animal bones is from area 10. The distribution and quantity of the bones enable a more detailed discussion between the layers. The animal bone distribution in the different layers in areas 9 to 13 is gathered to table 7. Based on the table the largest amount of animal bones are located in layers 3 to 5 in area 10. No layer was documented for seven (or 80) animal bones. Also five bones were described to come from layer M (Kivikero 2010c), but no information of what the layer in question is or where it is located could be found in the reports. Although, most of the bones seem to come from the middle layers of the area 10, the sample analysed was taken randomly and the animal bones were not collected systematically. This means that the real distribution in unknown.

Table 7. The number of animal bones in different layers in areas 9-13 in the excavation in 1985 in Turku. The layers are shown in the top row as numbers (and letters).

Area	1	2	3	4	5	6	/	?	M	Total
9		3								3
10		3	60	51	49	8	57	7	5	240
11							13			13
13	1									1
?							3			3
Total	1	6	60	51	49	8	73	7	5	260

5.2.4 Previous interpretations of the animal bones in the Church of the Holy Spirit

The burials in the church of the Holy Spirit have defective documentation of animal bones. Animals found from the church and the churchyard of Holy Spirit were never recorded or mentioned so no previous interpretations of the animals were ever made.

5.3 Finno in Espoo

5.3.1 Background and site description

Finno is situated in Espoo on the southern coast of Finland, some 15 km northwest of Helsinki (figure 1.). An archaeological field survey done in Espoo in the beginning of the 21st century concluded that there might be a partially preserved medieval hamlet in Finno (Nurminen 2000; Hakanpää 2005). In 2006 two large storehouses were planned to be built on the site.

During the medieval period Finno, also called as Finnevik, was a centre hamlet for taxation of the parish together with hamlet Mårtensby. The earliest preserved mentions of Finnevik are from a taxation register of Raseborg province in 1451 (Haggrén *et al.* and literature cited 2007:7-8). Before the 16th century there were four farms in Finno, two of the farms came in the use of the neighbouring hamlet Mårtensby before the year 1540 (Ramsay 1924:40; 1936:239). During the 17th century Finno evolved into a small manor and after several ownership changes, the manor got permanent owners in the beginning of 1920's. The borders of Finno and its surrounding hamlets can be seen on the map from 1698 in figure 10. (Ramsay 1936:239-246; Haggrén *et al*. and literature cited 2007:7-8).

Figure 10. Map of Finno from 1698 by Samuel Brotherus (photo Verna Kalmari, The National Archives of Finland). Finno is circled with orange (modification by the author).

In the 1950's the main building was moved 200 meters west. The old main building with its surrounding farmyard remained in use until the 1970's (Haggrén *et al.* 2007:10) when the area was sold to a car supply firm. In the 1980's a new warehouse was built and the old manor buildings were demolished. The warehouse was expanded in the 1990's to the west and north. Plans were made to expand further to the west where a large foundation pit was dug, but this expansion was never finished (Haggrén *et al.* 2007:8).

The aim of the archaeological field work was to investigate and document the structures and cultural layers preserved on the site. Because of the building pressure (constructions were to be started in 2007) the investigation started as a trial excavation to see if any remains were preserved. The excavations expanded when archaeologically interesting structures were revealed. In order to cover large areas, a digger was used to remove the top layers from the excavated area. The excavations were continued with chisels and spades in crucial areas following natural units. The work got a turn in the end of the excavation period when graves were found on the site. The excavated tract of graves was 190 m² consisting of 43 graves (figure 11.). Only 35 graves were excavated because some of the burials continued into the profiles. The bone material was poorly preserved and bone substance was noted in only twelve graves. The whole excavated area was 775 m² (Haggrén *et al.* 2007:6, 11-12, 21, 24). The graves were excavated during a 2 week period (Haggrén et al. 2007:12).

Figure 11. Photo of the excavated area where the graves were situated (photo by Georg Haggrén).

The excavation reports from the site are filed in the Archives of the National Board of Antiquity. The osteological analysis can be found as a supplement to the report and is made by the author.

5.3.2 Context and burial descriptions

A warehouse and a car park of the firm was situated in the middle of the old Finno hamlet. The remains of the hamlet were to the north of the warehouse. The 50 m wide area was an old field which was owned by the city of Espoo. Only this area was subjected for investigation. A deep trench following the northern border of the Atoy warehouse was opened. The trench was expanded on several occasions. The layers from the 19th and 20th century were mechanically removed. The southern and western parts of the trench touched an old road from Finno to Helsinki. The road could already be seen on the maps of Samuel Brotherus from 1698 (figure 10.). The road layers were in parts over 50 cm thick. In the western part of the trench, underneath the road layers, E-W oriented pits were uncovered. This western area was expanded to cover 190 m². The soil was removed to the top of the grave features (Haggrén *et al.* 2007:9, 11-12, 19).

The burial place was a 15 x 15 m large area but the burials continued to the south outside the investigated area (to the warehouse). The western border of the cemetery was outlined to a fossil field. Three of the burials cut this field. The NW corner of the cemetery was left unexcavated because it had standing remains of a potato cellar built in the 19th century. The building of the cellar had destroyed all archaeological remains and probably some 5 to 10 burials. In the centre of the cemetery several holes in rows with a 10 cm diameter were found. The holes were interpreted as remains of pole fencing which would have surrounded a field named *Norr Hemåkern*. Norr Hemåkern which can be observed on the map of 1698 was in use until the 1970´s (Haggrén *et al.* 2007:20, 21, 25). The cemetery is probably also drawn to the same map as uncultivated corner of the field (figure 12.).

The soil was mainly fine grained sand. The northern burials were dug into very fine sand. The graves were excavated as features with chisels and the soil from the graves was sieved with 5 mm mesh. The graves were documented in 1-4 layers to illustrate the structures and the bones in detail (Haggrén *et al.* 2007:11-12, 21).

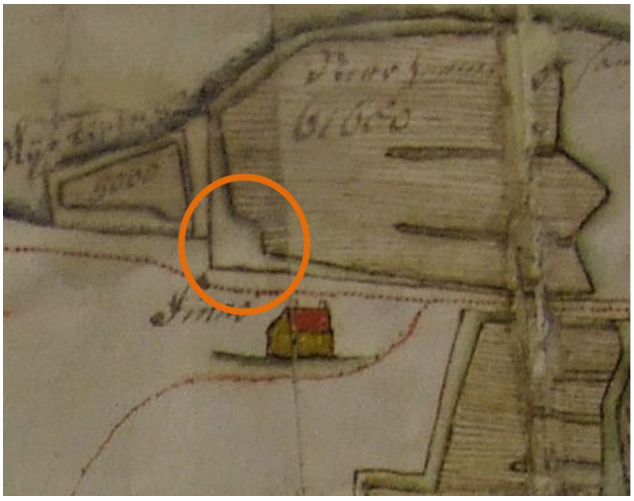

Figure 12. The uncultivared corner of the field in Finno from Brotherus map in 1698 circled with orange (Photo Verna Kalmari, The National Archives of Finland, modification by the author).

Most of the graves were dug in E-W **orientation** in four rows (figure 11.). The rows continued to the south outside the excavation area. The burials were the densest in the south, decreasing to the north. In the 3rd row from the east, some of the graves were in NNE-SSW direction. Seven later burials were noted in the middle of the cemetery cutting older graves in differed orientationfrom the other graves. Two of the later burials were in NW-SE orientation, 3 in SW-NE and 2 in E-W direction (Haggrén *et al.* 2007:22).

Stone settings were found on top of 21 graves (approximately in 60% of the graves). The stones could mostly be found in the filling, but sometimes (e.g. grave 5) the stones could be at the base of the grave. The soil surrounding the graves was free of stones (Haggrén *et al.* 2007:23).

In the north of the cemetery, 20-30 cm of the top soil had been removed before the excavations started. Because some of the soil had been removed, it is possible that the depths of the graves do not illustrate the original grave depths. The shallowest grave was only 10-15 cm deep, the rest being 20 to 50 cm in depth (table 8.). The grave depth was 74 cm maximum. The length of the graves was from 100 to 210 cm, 11 being 100-150 cm in length and 30-60 cm wide. The rest of the graves were 50-100 cm wide. Most of the graves had a rectangular **form** and a flat base. This indicates a coffin burial. To the north of the cemetery, the pits had a more uneven form and occasional dark lines which might indicate that the deceased was wrapped in shrouds (Haggrén *et al.* 2007:23-24).

Table 8. Depth of bones in graves in Finno (modified from Kivikero 2007).

Grave	3	5	8	14	16	26	27	28	38	39
Surface	6,69	6,75	6,71	6,73	6,72	6,78	6,77	6,76	6,71	6,58
Bone		6,52	6,66	6,68	6,56	6,59	6,7			
Base	6,46	6,28	6,41	6,21	6,26	6,48	6,25	6,5	6,31	6,4

Remains of **wood** could be identified in several graves but only in three cases could the wood be interpreted as **constructions**. The construction in grave 5 was interpreted as a punt coffin (fi. *ruuhiarkku*). The wood residue from graves 16 and 4 could be either from a coffin or from a punt coffin. Nails were found only in three graves. Only one of these graves contained more than one nail. This might suggest that wooden pegs were used in constructing the coffins or that the coffins were made of a tree trunk (Haggrén *et al.* 2007:23-24). Iron could have been too expensive to leave in the graves.

The graves contained only a few **grave goods**. A piece of **slag** was found in six graves and grave 31 had two pieces of slag (Haggrén *et al.* 2007:25). **Animal remains** could be found in four graves (graves 5, 8, 15 and 16). Remains of wood were discovered from the same depth as the animal bones in graves 5 and 15. In grave 8, wood was noted under the animal bones. In grave 16 the wood remains were found at the bottom of the grave whereas the bones were 30 cm higher up (Kivikero 2007; Haggrén *et al.* 2007).

Radiocarbon dates were done from 5 graves; graves 5 (Hela-1567), 8 (Hela-1523), 15 (Hela-1522), 16 (Hela-1519) and 26 (Hela-1520). In graves 5, 15 and 16 dates were done of animal bones, in grave 8 of unidentified bone fragment, in grave 26 of a human bone. Grave 5 was also dated by a piece of charcoal. Grave 15 was dated to the 15th century and the rest with most certainty to late 15th century early 16th century.

5.3.3 Osteological material

The bones were in very poor condition in most of the graves. Only a few bones could be analysed in laboratory conditions, the rest was documented on site. Some of the bones were almost fully decomposed so only the consistence and possible outlines of the bone were identifiable. Overall the animal bones were slightly better preserved than the human bones. The author was during the excavation responsible for documenting the bone material and for the analysis of the bones.

Human bones could be identified in two graves. Some dental enamel had preserved poorly in grave 15, and in grave 26 there was a shaft of a humerus that was in moderate condition. Unfortunately, no **age, sex or height** estimations were possible to do (Kivikero 2007).

Cattle bones were identified in three graves (table 9.). Grave 5 contained a piece of scapula and teeth, grave 8 had teeth and grave 15 had parts of lower jaw with teeth. The age of the cattle bone found in grave 15 was by its growth and wear of the teeth estimated to be less than 1, 5 years. In the filling of grave 16 part of the right (dexter) side humerus of a large ungulate was found. Mammal long bones were found in two graves (graves 5 and 8). Unidentifiable bone residue was documented in seven graves (Kivikero 2007).

Table 9. Bone identification of graves in Finno (according to Kivikero 2007).

Grave	Species	Bone	Part	Side	Weight (g)
5	Bos taurus	scapula	fragmentary	sin	13,1
8	unidentified	ossa longa	diaphys		6,3
14	Bos taurus	mandible	fragmentary	sin+dx	10,5
16	Bos taurus	humerus	distal	dx	30,8
27	Homo sapiens	humerus	diaphys	dx	24,8

5.3.4 Previous interpretations of the animal bones in Finno

The animal bones found in Finno were considered to be part of a funeral ritual because no animal bones were found in the soil between the graves. The animal remains were interpreted to be placed in the graves intentionally, possibly as a meal on the grave or leaving food to the deceased (Haggrén *et al.* 2007:25-26).

5.4 The Cathedral of Porvoo

5.4.1 Background and site description

The cathedral of Porvoo is situated on a hilltop in the centre of the city of Porvoo. Porvoo is located on the southern coast of Finland (figure 1.), and the town got its town charter during the late 14th century (Hartman 1906:19 and literature cited). The material discussed in this study comes

from the excavations performed in 2007. The cathedral was subjected to arson in 2006 when the shingle roof became destroyed. The fire also damaged parts of the interior. In 2007, when the church was under restoration, an automatic fire extinction system was planned to be installed to the church in order to prevent future fires. Since the fire extinction system was to be connected with the water system a 50 meter long pipeline was to be drilled vertically to the earth. The drill needed to be placed on the southern side of the church where an old abandoned cemetery was situated. The developer assumed that the old cemetery was destroyed in 1970s' when a service building was built (Lagerstedt 2008:5, 11).

The first church was probably built of wood and located on the same site as today (Hartman 1906:17; Hiekkanen 2007:459). The first stone church was built in the 15th century but a vicar is mentioned in documents already in 1327 (Hartman 1906:16 and literature cited; Knapas 1987: 64-67). The church became a cathedral after the Treaty of Uusikaupunki in 1721 (Knapas 1987:64). The placing of the cathedral can be seen in maps drawn by Samuel Brotherus in 1650,s and 1696 (figure 13.) where the cathedral is ringed by a fence. The cathedral was meant only for the Swedish speaking population of the town and the Finnish church is situated on the other side of the fence.

Figure 13. Map of the cathedral of Porvoo and the cemetery in 1696 drawn by Samuel Brotherus (Mäntylä 1994).

In the 1640s' the stone church became overcrowded and in 1669 the members of the parish were forced for bury their dead under the church and to the churchyard without permission. Because of this, half rotten bodies were removed from the church enabling animals to scatter the corpses in a revolting way. The cathedral had also burials under the floor which were sold to the noble and burghers (Mäntylä 1994:167 and literature cited). The architecture of these graves was studied in 1977 but the graves remained unstudied.

Because the churchyard was used by the whole parish and the town it became overcrowded quickly. In 1761 a ossuary was decided to be built for the stray bones in the soil. Since the beginning of 1770 burials inside the church became forbidden, this led to more evident problems with the small graveyard. The problem exceeded in 1788-1790 during the war of Gustavus III (fi. *Kustaa III*) when large detachments, of for example infantries, was buried in Porvoo. The consequence was that bodies were dug up after a couple of years before being decomposed. As a result the cemetery was extended (Mäntylä 1994:438 and literature cited). The town plan can be seen on the map from 1793 by Nils Hedengren (figure 14.) where the church fence stretches out wider than on the map from 1696. On the contrary to the earlier map, the Finnish church is also inside the fence.

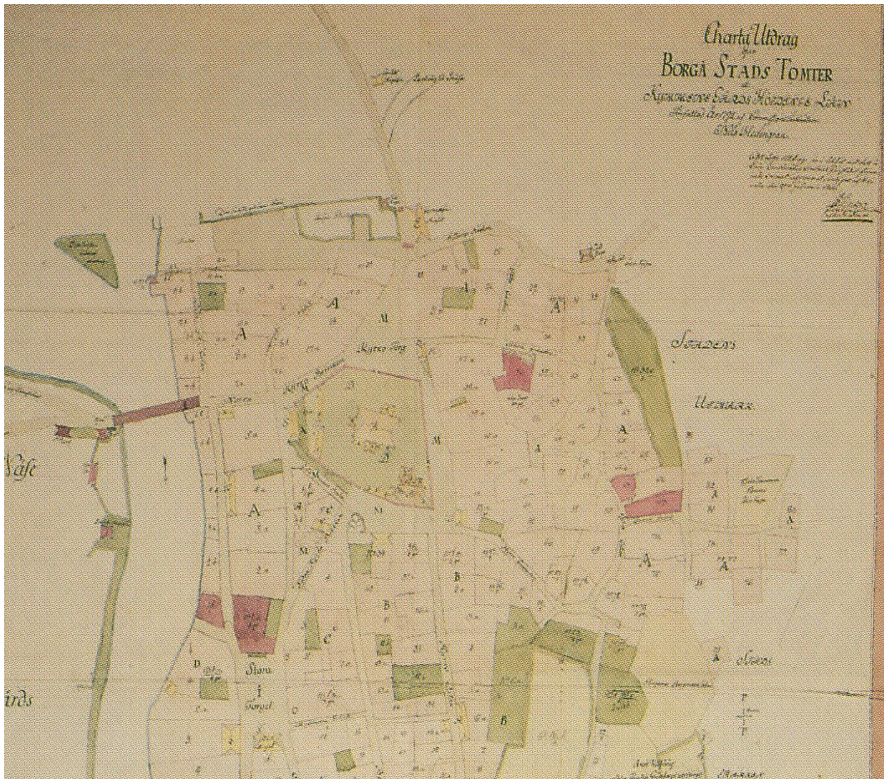

Figure 14. Map of the cathedral of Porvoo and the cemetery in 1793 by Nils Hedgren (Hartman 1906:367)

The archaeological excavation on the graveyard began as a supervision of a digger but when several graves were found in the area, full scale excavations started. The excavated area was 100 m² but only 25 m² was excavated to the bottom soil. The reason for this was that the builders had a tight schedule and they kept changing the place of the fire extinction machine in hope of finding a place empty of graves. The excavations were moved more to the west of the planned area, and the graves revealed were first documented and then covered. The aim of the excavations was to document and excavate the graves on the site and recover information of the extent of the cemetery, stratigraphy and the old burial customs (Lagerstedt 2008:5-12). The excavations lasted for six weeks. Some 60 graves were found whereof 53 were investigated (Lagerstedt 2008: 1, 15).

Some notes and sketches have been filed to the Archives of the National Board of Antiquities from the investigations done in 1977. The excavation report from 2007 is found in the Archives of the National Board of Antiquities. The bone material was analysed by Kati Salo.

5.4.2 Context and burial descriptions

The hilltop, where the cathedral is located, is very steep. The top rises some 24 m above the sea level. Stratigaphical interpretations suggest that the current level of the churchyard was formed after the construction of the service building. Nowadays the old churchyard resembles a garden with no visible graves. The filling from the 1970s' construction work is directly under the topsoil. The upper most graves were uncovered from the area at 1,2 meters under the present ground level, and in some places there were graves in five layers. The graves were in a dark medium coarse sand which included stray bone finds (Lagerstedt 2008:11, 14-15) of both humans and animals. The soil around the graves was medium coarse sand, light gray to deep yellow in colour in the bottom layer. Underneath the graves, the soil changed to clay mixed with sand and eventually to clay (Lagerstedt 2008:14).

The top layers were excavated by machine under the supervision of an archaeologist. The graves were excavated as features. The excavations continued with spades and chisels. The skeletons were uncovered with wooden spatulas and brushes keeping the graves protected with a canopy. When needed, for example for dating, artefacts that clearly belonged to the grave context or being in the surrounding soil were removed. Macrofossil samples were taken from the abdomen area of all bodies. The graves were documented in 1:20 drawings and photographed (Lagertsedt 2008:13). Osteologist Kati Salo did additional notes of the bone material.

The **orientation** of the graves could be identified in 51 graves. E-W orientation was used in 26 graves, and ENE-WSW in 25 graves. In locations were graves were situated on top of each other, the bottom graves are in ENE-WSW direction. The church is also built in this orientation (Lagerstedt 2008:17). No **stone settings** were noted on top of the graves. The **size and form** of the graves is not mentioned in the excavation report. The graves were most often found when outlines of **coffins** emerged. The adults were buried in coffins except for the deceased in grave 35 who was buried on his side without a coffin. Nails were used in constructing the coffins. Graves

28 and 29, which belonged to small children, did not have any **wooden constructions** (Lagerstedt 2008:15-16). The coffins were mainly rectangular narrowing to the foot end or rhomboid in form. Some graves had traces of the lid (maps in Lagerstedt 2008 and own observations during excavations).

There were only a few objects in the graves. Three children's graves had pins from shrouds and five had pieces of bronze spiral. A glass bead was found near the left wrist of a male in grave 2 and near the head in grave 30, who was also a male. There were traces of burial garlands in two children's graves (graves 41 and 56) (Lagerstedt 2008:17-20; Salo, K. 2007). The macrofossil analyses show that the child's grave number 29 had traces of Brophytes. It was suggested that the child was buried on top of a moss bed (Lempiäinen 2008).

Grave numbers 14, 18 and 29 contained fish (Salo, K. 2007). Otherwise no animal bones were noted in grave contexts. The stray bones on the site were mainly human bones but some animal bones were noted (e.g. sheep or goat femur). Lagerstedt speculated that the loose human bones would derive from older graves that were destroyed when new graves were dug (Lagerstedt 2008:14). There are no comments on the stray animal bones in the report, and the only proof of them is a picture taken by the author (figure 15.).

Figure 15. Photo of the sheep/goat femur found in the Porvoo cathedral cemetery during excavations.

5.4.3 Osteological material

The osteological material comes from 53 graves. The bones were treated as a closed feature and analysed by Kati Salo (Salo, K. 2007:3). The stray bones were unanalysed and re-buried to the graveyard (Salo, K. 2007:3). The material is quite small which naturally influences the interpretations.

The sex estimations were possible to do on the material. Five individuals were concluded to be female and six possibly female. Eleven of the graves contained a male and one possible male. The sex was unclear in one grave (Salo, K. 2007).

Of the 53 studied graves, 24 the deceased were stated to be adults (**age**). One of the deceased had died prematurely (grave 28) and as many as 14 had died under the age of one. Most of the deceased had died between the ages 18 to 44 and 35 to 64. Women and men are represented almost equally in all the age groups, although, men more frequently among 35 to 64 year olds. The oldest person, being between 50 to 79 years of age, was a woman (Salo, K. 2007:105).

The height estimations vary with women and probable women from 147 cm to 168 (figure 16.). The male are taller, from 166 to 175 cm (Salo, K. 2007). Some overlapping in the heights of men and women can be detected between the heights 163 and 168 cm.

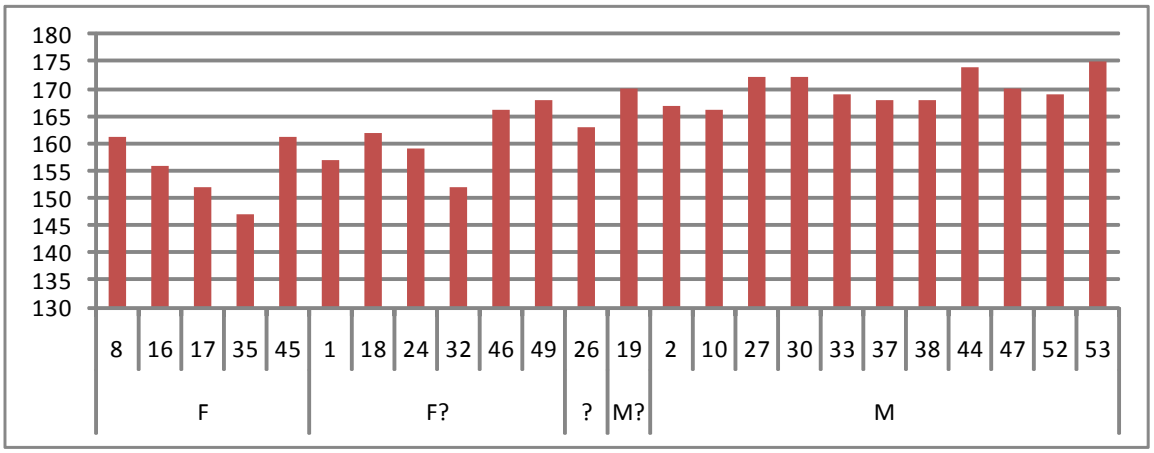

Figure 16. The height and sex of the deceased in Porvoo. F=female, F?=possible female, ?=unidentified, M?=possible male, M=male. Numbers below the collumns refer to the graves (based on Salo, K. 2007).

Also pathological, morphological and genetical changes in the skeleton were noted (Salo, K. 2007:6). The prevalent pathological changes appeared to be metabolic diseases, dental diseases and joint diseases. Almost half of the deceased had some sort of metabolic disease noted, mostly scurvy, rickets and linear enamel hypoplasias. From dental diseases caries and calculus (with periodontitis) were common. Joint diseases could be mainly seen in the elderly; osteoarthritis was noted on 6 deceased. Healed traumas were noted on 6 individuals, and 4 had an infectious disease (e.g. TBC). Also traces of pipe smoking and/or snuffing could be seen on some of the deceased (Salo, K. 2007:106-107).

From **animal remains** Salo identified the pharyngeal bone (os pharyngeum inferior) from a fish of the carp family (Cyprinids) in three graves: numbers 14, 18 and 29. The deceased in grave 18 was 40 to 50 years old, and the deceased in graves 14 and 29 were infants. According to the report, the fish bones in the infant graves were probably not consumed because of the young age of the deceased (Salo, K. 2007). It is unclear how the bones ended up in the context. The loose animal bones were not analysed before re-burial. According to personal communication with Salo, bones from northern pike, perch, fish bones and scales were identified in graves 1, 17, 19 and 46. Also near grave 19 bones from a rat sized of a mammal was found (Salo, K. 2010b).

5.4.4 Previous interpretations of the animal bones in the Cathedral of Porvoo

The excavations done in the cathedral of Porvoo have defective documentation of animal bones. The two cyprinid pharyngeal bones were interpreted not to be consumed by the infant but no other explanation was given for the existence of fish bones in the graves. A more detailed investigation of the cemetery soil with all the stray bones could have shed some light to the matter. Instead the bones remained unrecorded and no interpretation was given.

5.5 Visulahti in Mikkeli

5.5.1 Background and site description

Visulahti is situated in Mikkeli in the eastern part of Finland (figure 1.). The site contains inhumation burials and 5 cremations dating to the Iron Age and was first excavated in 1954. The burial place was discovered when artefacts were found during the construction work of a main road in 1954. When some workmen were flattening the earth on a field with a bulldozer to the east from a birch lane leading to the Manor of Visulahti they found some metal objects in the southern edge of the road. About 20 meters to the east they found a women's grave. Only this grave was investigated during the same year by Jorma Leppäaho. The excavation lasted for only three days and the labour was untrained. The place was inspected in 1938 because according to local folklore, a church and a churchyard was located near a birch lane leading to a Manor house. Nothing was found during the inspection (Leppäaho 1957).

Leppäaho continued excavations in 1955. The excavated area was roughly 1600 m², and he mentions that the graves could possibly continue to the east of the investigated area (Leppäaho 1957). The excavated area is shown in figure 17. Later excavations were done in 1978 and 1981 (Torvinen 1978; Niemi 1981). The material analysed for this Master's thesis comes from the 1954 and 1955 excavations, mainly from the later year. A combined report from the excavation years 1954 and 1955 is filed in the Archives of the National Board of Antiquities. There is some additional information that does not come across from the reports in the catalogues.

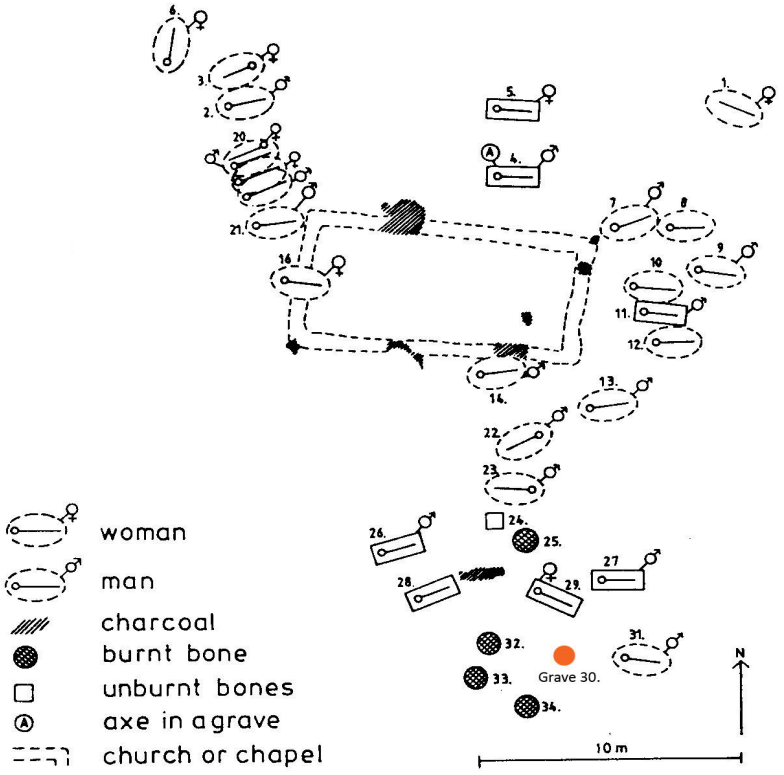

Figure 17. Map of the excavated area in Visulahti. Grave 30 is marked by orange (Purhonen 1997:382 modified by the author).

5.5.2 Context and burial description

In 1955 the excavation area was opened with the help of a tractor. The excavation methods are not described in Leppäahos report but can be read between the lines. The text indicates that some sort of level excavation has been applied and excavation was continued with shovels. The outlines of the graves could be seen directly after the top soil was removed. The top soil was mostly 25 to 30 cm thick. The western and south-western part of the excavated area had clayey soil. The other parts of the investigated area had sandy soil (Leppäaho 1957).

The orientation of the graves was poorly documented. The orientation was mentioned in only three grave descriptions as WSW-ENE, E-W or SW-NE. Based on one overview map it seems that the other graves follow these orientations (also figure 17.). One body was buried in the opposite direction compared to the others. In the grave 22 the feet were facing SW and the head NE. **Stone settings** were mentioned in 13 graves. One stone setting seemed to cover 2 graves (graves 2 and 3). The settings on the graves had the minimum of 3 stones and at the most 6 stones. **The size** of the graves was mentioned in 6 cases, most of them interpreted to be male graves. The smallest male grave was 165x40 cm and the largest 240x100 cm. Most of the male graves were on average 2m in height. The depth and **the form** of the graves do not come across from the descriptions. **Wooden constructions** were found in 10 graves. The constructions were described to be coffins made of one trunk or a frame. Some of the frames had a base and some lacked the evidence of a base. Only parts of the coffins could be seen (Leppäaho 1957).

I would interpret the objects described in Leppäahos excavation report as parts of the clothing. The objects include jewellery, flint and a belt ring. A piece of bark found on top of a fibula in grave 16 could be interpreted as belonging to the burial ritual and perhaps to **grave goods**. Also silver bracteate was found in grave 3. Knives were found in some graves. Leppäaho mentions that no pottery was found from the site (Leppäaho 1957).

A**nimal remains** were mentioned in the report only in grave 30, also called as the 'sacrifice bull'. These bones came from a formless pit. In the top layers of the pit some human bone fragments and animal teeth were found. At the bottom of the pit, partly around a large stone in the northern end, remains of an animal were found. Leppäaho describes the animal to be a bull, probably 1-year old. When the skull of the animal was lifted, part of human skull with teeth was uncovered. In the southern end of the pit lots of wood was found. A couple of graves were interpreted to be damaged when the grave 30 was dug (Leppäaho 1957).

5.5.3 Osteological material

No osteological analyses from this material were done before Kati Salo started her doctors' thesis. Salo analysed the human bones from the site and the author has analysed the animal bones that have been mentioned in the catalogue of finds. Only 20 of the graves were mentioned in the catalogue to contain animal bones. The analysis of the human bone material is still unpublished.

The sex, age and height estimates of the deceased are done in Visulahti solely based on the size and form of the grave and the objects found. Of the 27 graves, 15 were interpreted to be male and eight to be female. One of the burials was interpreted to be a child. The male graves were from 165 cm to 240 cm in size. Two females were described to be at most 130 cm and 150 cm (graves 3 and 5). The size of the child grave was 150 cm (Leppäaho 1955).

Animals were mentioned in the catalogue of finds on three occasions. In grave 3 a whole cattle heel bone (calcaneus) was found near the stone settings from the yellow soil (Kivikero 2010b).

The teeth from the filling of grave 30 were identified as horse premolars from the upper jaw (maxilla). The sex of the 'sacrifice bull' could not be determined but the bones could be identified to be cattle. The skull with premolars and molars, the first and second cervical vertebra, four other cervical vertebras and five thoracic vertebras were preserved (figure 18.). Some fragments of ribs (costae) and vertebra were noted. The bones seem to represent one individual. In the analysis the age of the cattle turned out to be more than what Leppäaho suggested. Based on the fusion of bones the individual was over 5 years old. The growth and wear of the teeth suggest an even higher age of 8 years. This would mean a relatively old animal (Kivikero 2010b).

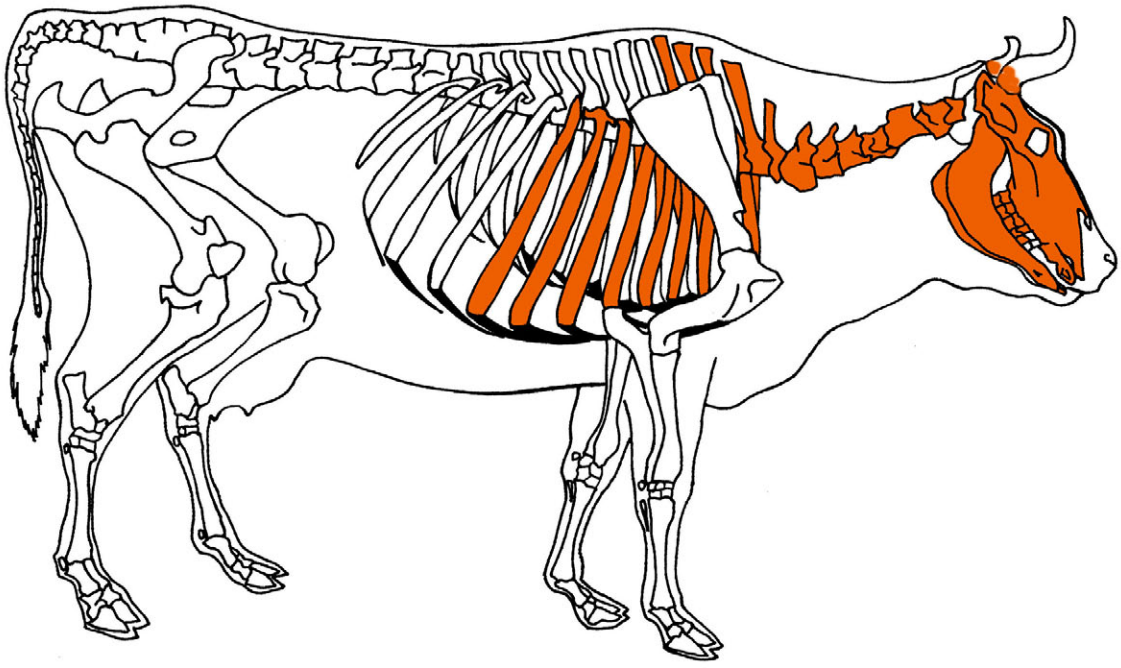

Figure 18. Representation of the cattle bones in grave 30 in Visulahti is shown in orange.

From the bone material of grave 30, a distal end of a human (*Homo sapiens*) humerus was analysed. The bone had belonged to an over 13-19 year old individual. Both the human and animal bones were in similar condition. This might suggest that they were buried around the same time (Kivikero 2010b).

5.5.4 Previous interpretations of the animal bones in Visulahti

The single cattle burial found in Visulahti was described by the excavation leader Jorma Leppäaho as being a "sacrifice bull" which would have been sacrificed in an Iron Age ritual. Leppäaho interpreted the animal to be a sacrifice because it had no shoulder blades or pelvic bones. A piece of a human cheek bone and three teeth were recovered when lifting the cattle skeleton from the ground. These human bones seemed to confirm the hypothesis of a sacrifice animal to Leppäaho. Leppäaho describes that there were a couple of burials under the animal burial. These older burials were partially destroyed by the digging of the pit in a ritual ceremony (Leppäaho 1957).

Jussi-Pekka Taavitsainen has criticised Leppäaho's interpretation. Taavitsainen claims that the interpretation Leppäaho makes in his excavation report is not well argued and that Leppäaho follows the archaeological tradition of explaining the unexplainable anomalies as rituals. Taavitsainen states that if the cattle burial was part of a ritual there should be similar burials also in other cemeteries in eastern Finland. The cattle should in his opinion be regarded as a later interference of the site. He backs his opinion of later interference by mentioning a witness who describes burials of dead animals to the same field as late as the beginning of the 20th century. The bones are, according to Taavitsainen, in too good condition to be from the same date as the inhumation burials (Taavitsainen 1990:328-330). Leppäaho and Taavitsainen make their interpretations from opposite standpoints but neither has turned to the bone material for evidence to back their conclusions.

5.6 Suotniemi in Käkisalmi

5.6.1 Background and site description

Käkisalmi is situated in Karelia, on the western border of Russia (figure 1.). Until the Second Wold War this area was part of Finland. The graves found from the Suotniemi are thought to represents the eastern burial custom (see e.g. Schwindt 1893). The site was discovered when workmen were taking sand from a small depression on a field, near the faience factory of Suotniemi. The workmen found several objects of different size. During the 1870's some of the objects were taken to the Museum of History (*Historiallinen museo* now known as the National Museom of Finland).

The site was excavated 1885 and 1886. Theodor Schwindt, the excavation leader, had been sent to Karelia to inspect some sites. He was in Suotniemi on a couple of occasions for a few days and left the workmen from the faience factory excavate on a slope and a field on the northern side of the depression (Schwindt 1887a, b).

Theodor Schwindt published the findings in 1893 along with some other sites in an article describing the Iron Age in the Karelia. The excavation report and the description of Suotniemi in

Schwindts article are almost the same with some minor differences. An excavation report from the excavations is stored in the Archives of the National Board of Antiquities along with a letter from Schwindt written in 1887 to the Archaeological Commission. The letter shows that during the last days of his investigations in Karelia, Schwindt found four burials containing ten skeletons and 426 artefacts. He writes he could not do the job with the required accuracy (Schwindt 1887b).

5.6.2 Context and burial descriptions

According to Schwindt, excavating the field was slow because the earth was stony. Under the surface soil/topsoil a layer of at least 0,6 meters, filled with stone and earth, was uncovered. The stones were sharp-edged and the size of one or two fists. Underneath the stones, a black sooty soil layer of 3-4 cm was noted. The sooty layer was followed by a grey soil by the thickness of one palm, which had small stones in it. Under the grey soil another layer of sooty soil was found in a 3-4 cm thick layer. Under the second sooty soil, about 0,3 cm of earth mixed with stones was found. Sandy soil was uncovered below these layers (Schwindt 1893:1). The excavation methods are not apparent from the written material, although, the rapidness of the excavations is obvious from Schwindts writings.

Neither the report nor the article has a map drawn of the site (speculations of the location of the site see Uino 1997). I have produced a map based on Schwindts descriptions of the area, which is not in scale (figure 19.). I have attached to the map the drawings of the graves presented in Schwindt's article. Four of the five excavated graves were inhumation burials, one grave (number 3) consisted of cremated bones (Schwindt 1893). **The orientation** of the graves can be seen in this map. Descriptions of the orientation are only made of grave 2 mentioning that the head of the deceased was to the NE and the feet to SW. **Stone settings** and **the size and the form** of the grave do not come across from the texts. **Wooden constructions** are mentioned in/near graves 2 and 4. The skeletal remains of the deceased in grave 2 were found on the SE side of a decayed piece of wood. The deceased in grave 4 was laid inside a wooden frame almost 2 meters long and 1,2 m width Schwindt 1983:6-9).

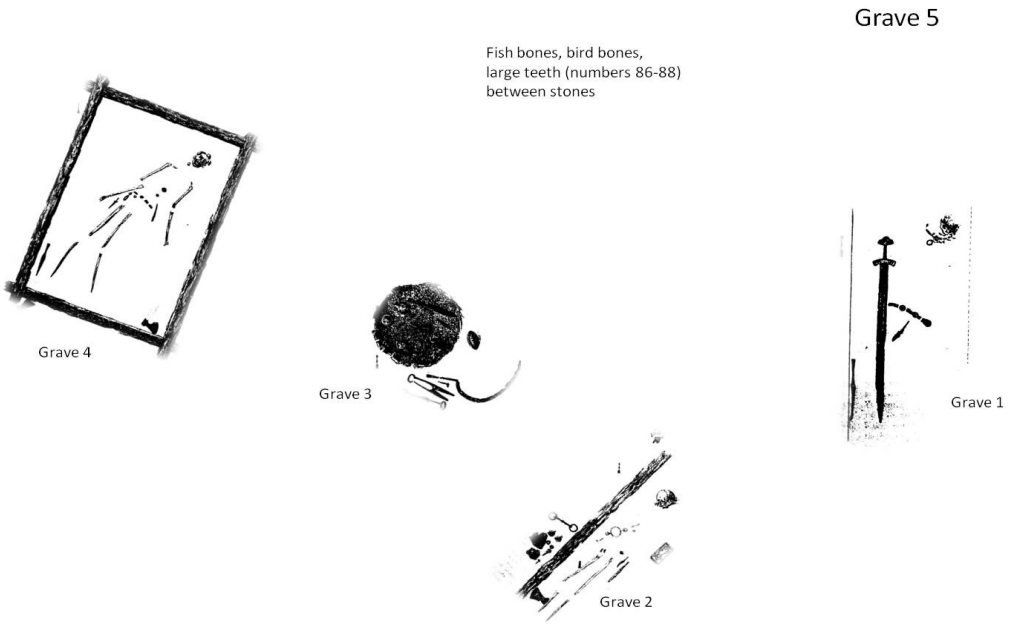

Figure 19. Map of the excavated area based on descriptions in Schwindt 1893. The map is not in scale.

Every grave contained either weapons or tools, such as an axe or a knife, deposited near the deceased. A copper dish and a cauldron were laid into grave 1. The dish had traces of some greasy organic substance inside. Pottery shreds were found at least in one of the graves (grave 5) and on top of grave 4 and possibly grave 2. Shreds were also scattered to the burial area (Schwindt 1893:2-11). According to Anne-Sofie Gräslund (1992:201) these could be interpreted as **grave goods**.

Animal remains were found near grave 1 in the sooty and gray soil. Bones were also recovered between stones on top of grave 4, in grave 5 and between graves. Because Schwindt did not produce any maps, the relationships of the animal bones (and other grave goods) to the graves are difficult to establish. Bird and fish bones are mentioned when describing graves 1, 2 and 4. In grave 1 the bones seem to be situated on top of the grave. The other bird and fish bones are situated somewhere NNW from grave 2 in an earth mixed with stones. A large pile of fish bones could also be found E of grave 5 in 0,8 m depth (Schwindt 1893:2-11). The fish bones are, according to Schwindt, an indication of fish meals (Schwindt 1893:152). The other animal bones are mostly teeth which are found on top of grave 1 and 4 and in grave 5 (Schwindt 1893:2-11). Schwindt interprets these animal bones as leftovers from ritual and commemoration meals (Schwindt 1893:187-188).

5.6.3 Osteological material

The preserved human bones were analysed by Kati Salo for her upcoming doctoral thesis and the material is still unpublished. All of the animal bones mentioned in the list of finds were requested for analysis but only some of the bones could be found. The contexts of the animal bones can be seen in table 10. The bones were analysed by the author.

Table 10. List of finds from Käkisalmi where the animal bones are mentioned.The highlited rows were available for analysis.

Subnumber	Description	Context
8	Large bones accompanied with a long, narrow bone, possibly squirrel tooth and part of some humerus	NE and E of grave 1
9	Bird and fish bones	same as above
40	Cow tooth (?) and a piece of shoulderblade (?)	NNE of grave 2
42	Pig tusk and 2 cow teeth	same as above
44	Bird and fish bones	N of grave 2, scattered
70	Four teeth. One large front tooth, two large molars and one small molar	on top of grave 4
86	Fish bones and scales, big pile of large and small	E of grave 5
87	Bird bones, little	same as above
104	Four horse teeth and a couple of other bones	Grave 5
105	Fish bones and a couple of bird bones (?)	Grave 5

The age and height estimations are absent in the excavation reports and the only **sex** estimation is from grave 4. The deceased is interpreted to be a male, probably based on the grave goods and remains of clothing. The bones in grave 4 are, according to Schwindt, in best condition (Schwindt 1893).

Animal teeth were found on top of grave 4 in the earth mixed with stones. These teeth were from horse, cattle and sheep or goat. Horse teeth were also found in grave 5 along with cattle humerus and mammal long bones. Fish bones from zander (*Sander lucioperca*) and perciformes were found in the grave alongside a merganser (Mergus sp.) bone. Zander, perch (*Perca fluviatilis*), roach (*Rutilus rutilus*), salmonids (Salmonidae) and black grouse (*Tetrao tetrix*) bones were found NNW from grave 2 in an earth mixed with stones. The same species, with the additional northern pike, were found E of grave 5 (Kivikero 2010a).

Near grave 2 the fish bones seem to be more from the skull area, only some fin bones and vertebra were noted. East of grave 5, the skull parts are overrepresented in perch and northern pike bones. Zander bones are more anatomically evenly distributed, although, skull parts are numer-

ous (table 11.). Fish scales (squama) are found in this context frequently. The domination of fish skull parts is often interpreted to fish handling. The skulls tend to be left to the primary production places whereas the rest of the fish was salted or otherwise treated for trading purposes.

Table 11. Fish anatomy representation in Käkisalmi. The numbers on the top row refer to an anatomical distribution made of the animal. The key for the anatomical distribution is available in appendix 4.

Taxon	0	1	12	13	14	15	16	Total
Cyprinidae				11	8	1	19	39
Esocidae							4	4
Esox lucius				10	1	2		13
Perca fluviatilis			29	111	17	5		162
Percidae			12		4	71	200	287
Pisces	3			146	51	68		268
Salmonidae			3	9	4	1		17
Sander lucioperca		1	27	91	69	11		199
Total	3	1	71	378	154	159	223	989

5.6.4 Previous interpretations of the animal bones in Suotniemi

Theodor Schwindt estimated that the fragments of potsherds found in Käkisalmi were remains of vessels used in funerals and commemorative meals. These meals would be consumed before the grave was filled and covered with earth. The animals were probably butchered on the site because so many teeth were found there. Skulls would not have occurred if the meat for consumption was brought to the site. Schwindt also relates the numerous fish bones and bird bones to meals on the graves. Horses were perhaps sacrificed for male deceased in graves 2 and 5 because artefacts related to horses and horse teeth were uncovered near these graves (Schwindt 1893:151, 153, 188). Further evidence for linking horses to male graves was not presented; furthermore there were no women in the excavated graves. Schwindt also states that the graves were dug to the easiest place near the hamlets and trying to line the graves into same orientation (Schwindt 1893:193). Taavitsainen on the other hand doubts that the animal bones mentioned by Theodor Schwindt would be offerings or meals. He supports his claim by concluding that if meat was brought to the site as meals or offerings, teeth would not be found (Taavitsainen 1990:330). The interpretations proposed by Schwindt and Taavitsainen presume that only parts with high percentage of meat would be consumed and the skull (which include teeth) would be discarded from consumption.

6. Interpretations of animal bones in graves

Burials may be understood as ritual containers. In such context the role of animals may also be complex. Animals have naturally been exploited for their meat, used as raw material and as labour but their function in the grave might also be ritualistic (Insoll 2004:73). When cattle, sheep, goat or pig bones are found in burial contexts, the bones are often subjected to the theory of ritual. They might therefore be used in the burial rituals or during commemorative meals on graves. These animals have traditionally provided food for people so the occurrence of these animals in such context is somewhat logical. But what if these species had other functions instead of consumption or if we find animal bones in graves which do not meet our logical way of thinking? The ways of interpreting the same material are infinite. Interpretations of the material depend on the context.

In this chapter I will discuss interpretations, both previous and my own. The interpretations are divided according to themes and sites. Bones from the same site may belong to several interpretation themes. Due to the lack of detailed documentation of the contexts of the animal bones in most sites, a detailed study and interpretation of each bone is not possible.

6.1 Ritual meals and food offerings

Ritual meals can be eaten on graves during funerals and on commemoration days. Ritual meals are examined more closely already in chapter 4. Finds of animal remains or traces of ceramic vessels could in theory imply that ritual meals were eaten on the graves. Such traces can also be connected with food offerings to the deceased. The offerings would first take place on the funeral day, and later on, for example, on commemoration or feast days the food could be left on the graves (Gräslund, A-S. 1992:142; Pentikäinen 1990:29; Valk 2007:141). The animals mostly connected with consumption are the so called meat production animals, such as cattle, sheep, goat and pig. Fishes and birds could also be considered to be ritual meals (see previous interpretations of the animal remains found in sites).

6.1.1 Meat production animals

In Luistari potsherds and remains of meat production animals were described to be found both in graves and in their filling (figure 20.). In the graves the pieces of pottery and animal bones were considered to be food offerings to the dead. The food would be placed in a vessel, or without one, near the deceased in order to be transported to the ancestor world (see discussion in chapter 3.1 and 3.2).

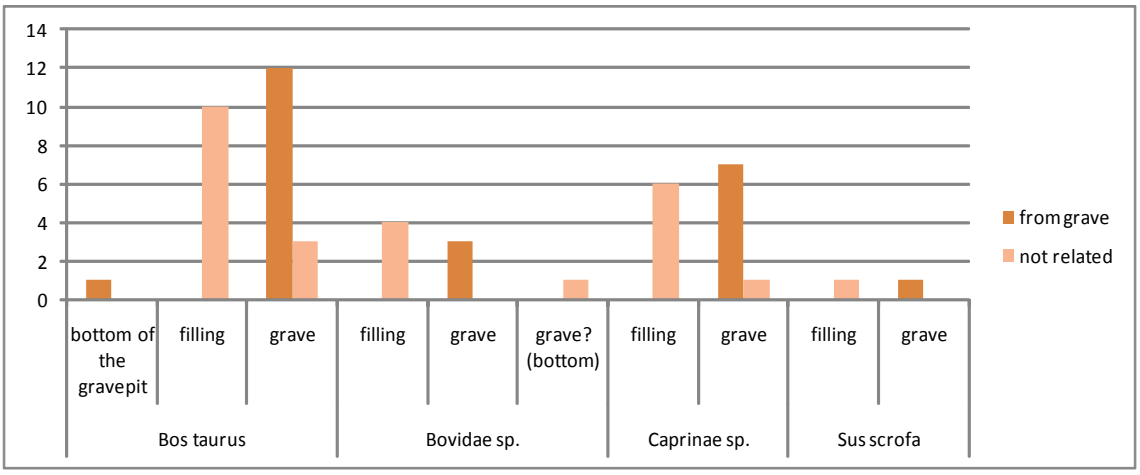

Figure 20. Meat production animals found in different grave contexts in Luistari.

The pieces of clay vessel and bones found in the filling of the graves in Luistari (figure 20.) and in Finno could also have a functioned as food offered to the dead or as a commemorative meal eaten directly during the funeral. As described in chapter 4.4 the commemorative meals were left on the graves. In Finno the animal bones were in most cases situated in the middle of the filling. If a coffin was found, the bones would be on top of the estimated coffin construction. The placing of the remains would suggest intentional deposition in the grave since the surrounding soil did not contain any animal bones. Instead of placing the food on top of the grave, it could be left in the grave during the funerals as well. The grave would then be covered with the same soil as the rest of the grave.

In Finno two cattle bones and one unidentified long bone could be considered to be “meat rich”. These bones were found in the filling. In four cases in Luistari meatier parts of the so called meat producing animals were found. These are the parts of the animal skeleton that, for example Taavitsainen (1990) and Tupala (1999), have interpreted to be suitable for feasts. However, the bones most frequently found from Luistari are teeth. As I have pointed out before, parts of the skull has not before been considered to be suitable for eating purposes (e.g. Tupala 1999). On the other hand, when examining cook books from the 17th century onwards skull parts are treated as a part of the food repertoire (see e.g. Sartorio 1616; Winsnes 1845; Östman 1911). Even today in the Middle East sheep and goat cheeks are regarded to be the tastiest part of the animal. It may well be that only a person living in the west would disregard these parts of the animal that are not regarded as “rich of meat”.

In Luistari seven bones from meat production animals were found in the topsoil of the graves. One of the bones was a radius (rich of meat), and the other were teeth. In Käkisalmi, pieces of teeth and clay vessels were found on top of grave 4. In Finno the cattle mandible from grave 14 and the human humerus from grave 27 seem to have been found in the top layers of the graves (compare tables 8. and 9.). All the other bones found in the top layers could be indications of food offerings or meals eaten on the graves (as described in chapter 4.4 described). However, the human humerus in Finno is not likely part of a meal. The location of the humerus could be

explained by the deceased position in the grave, probably lying on his/her side.

6.1.2 Horses

Consumption of horse meat is often connected to religions and beliefs predating Christianity. This was a time when horse meat was considered to be a delicacy (see e.g. Gelling & Davidson 1969: 91,168-169). Horses were also connected with deities in early Germanic beliefs. The avoidance of horse meat seems to come from Christianity,c possibly as a reaction against pagan ways, although the literature does not support this observation. During the Middle Ages eating horse meat was forbidden by the Church (Egardt 1962: 75-77, 109; Simoons 1994: 180-193 and literature cited). Some guidelines towards impure animals are mentioned in the 3rd book of Moses (King James Bible):

> *11:2 Speak unto the children of Israel, saying, These are the living things which ye may eat among all the beasts that are on the earth. 11:3 Whatsoever parteth the hoof, and is clovenfooted, and cheweth the cud, among the beasts, that may ye eat. 11:4 Nevertheless these shall ye not eat of them that chew the cud, or of them that part the hoof: the camel, because he cheweth the cud but parteth not the hoof, he is unclean unto you. 11:5 And the coney, because he cheweth the cud but parteth not the hoof, he is unclean unto you. 11:6 And the hare, because she cheweth the cud but parteth not the hoof, she is unclean unto you. 11:7 And the swine, because he parteth the hoof, and is clovenfooted, but cheweth not the cud, he is unclean unto you. 11:8 Of their flesh ye shall not eat, and their carcasses ye shall not touch; they are unclean unto you.*

According to this quotation horses are not to be eaten because they are not ruminants or clovenfooted. How well these guidelines and injunctions were obeyed by the Finns is unknown. As Auli Tourunen has proposed, the overall consumption of horse meat during the Medieval period should be studied further (Tourunen 2006:348).

It is possible that the horse remains found from the interpreted filling in Luistari could be leftovers from a feast were horse meat was consumed. The horse bones in Luistari are mainly found in the filling (table 12.). The bones are long bones which have a high meat percentage. These bones are from unfurnished graves which are linked with Christianity, even though their precise date is unknown (see material description and literature in chapter 5.1). The people who buried their dead during this time might have not considered horse meat to be any different from other meat production animals. Thus the parts of horse might be leftovers from a meal (such as in chapter 6.1.1). It is also possible that the unidentified long bone shaft in Finno, which came from the filling of grave 8, is a horse bone. It could be interpreted as a meal as well as the horse teeth from grave 5 in Käkisalmi.

Table 12. Horse bones in graves in Luistari based on the context.

Context	Bone	Grave	Total
filling	femur	216	1
	radius	272	1
	ulna	24	1
grave	cranium, mandible, humerus	161	1
Total			4

The horse cranium, mandible and ulna found in grave 161 (table 12.) were found in the filling but interpreted to derive from the grave (see chapter 5.1 and literature cited), even though the depth of these bones are unknown. The bones were found in the middle of the grave as shown in figure 21. The anatomical positioning of the remains could refer to separate parts of an animal deposited in the grave. As already discussed in chapter 6.1.1 the skull could also be regarded as food. Therefore it is possible that the bones in grave 161 could be part of a funeral meal.

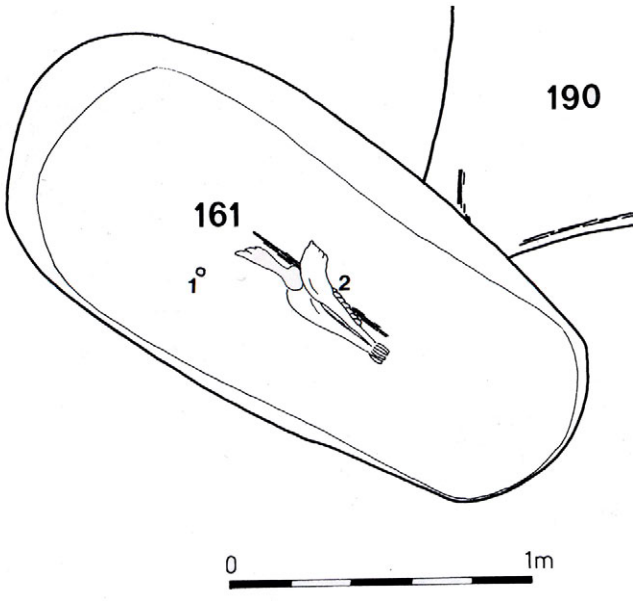

Figure 21. The location of the horse bones in grave 161 from Luistari (Lehtosalo-Hilander 1982a:155)

6.1.3 Dogs

Dogs were domesticated already during the Stone Age. The domestication of dogs is thought to have had two purposes. The dogs were tamed to be used as hunting assistance or they domesticated themselves because of the easy food resources available near human communities (see e.g. Clutton-Brock 1999). Dogs could also be part of the food supply for the people. Crushed, broken, charred and defleshed dog bones found in pre-historical sites in Central and Eastern Europe are seen as proof of dog flesh consumption. Most of the evidence points out to ritual treatment and to ritual burial of dogs (Simoons 1994:200, 232-241 and literature cited) but the evidence for actual consumption of dog flesh is still insufficient.

The only dog bones in this study come from Luistari. The dogs were placed near the body, probably to ensure the passage to another world (discussion in chapters 3.1 and 3.2). The identified bones were mostly from the skull, with the occasional long bones. From the material it is possible to claim that only parts of the animal were buried. Hence it is possible that the dog functioned as a food offered to the deceased.

6.1.4 Fish and birds

The fish bones in Käkisalmi grave 5 were from zander skull and the bird bone from the thorax of a merganser. These bones could be interpreted as food for the deceased but the context descriptions are unfortunately inadequate.

The fish bones found in the graves from Porvoo also lack detailed context description. The bones were located mostly in the graves of adolescents. As Kati Salo point out, the fish were unlikely consumed by the deceased (chapter 5.4.3). Instead it is possible that at least part of the fish was deposited to the grave, possibly as a food offering.

6.2 Animal sacrifice

Animal sacrifices are often considered to be part of the grave good because the animals were probably needed in the afterlife. Animals would thus be placed in the grave close to the deceased in order to ensure the transference to the after world (Gräslund, B. 1994:19). A more detailed description of animal sacrifices can be found in chapter 3.

In Luistari the dogs have been interpreted as followers or sacrifices. The dogs are found in furnished graves close to the deceased. This supports the theory of the Iron Age transmigration of the souls. The person would need to have his/her dog with him/her if they had a dog while living (descriptions in chapter 5.1.1 and 5.1.2 and discussion in chapter 3.1). In graves 150 and 281 in Luistari almost the whole animal was found, although in grave 150 the skull was interpreted to be from the filling and in grave 281 the dog skeleton was outside the interpreted coffin. These dogs could have been thrown into the grave or placed on top of the body as Rasch has suggested for similar cases in Sweden (Rasch 1992:188). The other dog bones found in the graves were teeth. This means that the whole animal could originally have been placed in the grave but the other parts of the dog would have become decomposed.

6.3 Protective use

In recent discussion finds of animal bones in building depositions have been connected with offerings (see e.g. Carlie 2004, 2006; Falk 2006; Hukantaival 2006; 2007a-c). There can be many reasons for depositing animals inside or under the building. Building offerings could have been offerings for ancestors or supernatural beings. As such, their purpose may have been to drive away bad spirits, gain luck, protection or fertility (Carlie 2006:206; Falk 2006:200; Hukantaival 2007c:70). Ann-Britt Falk has stated that during pre-Christian times the meatier parts of the animals were placed as offerings in the houses. During the Middle Ages these depositions were mainly skulls, whole animals or fragments from various species (Falk 2006:201). In Finland and Scandinavia parts of an animal, often referred to as being poor in meat, such as jaws and parts of skull, were placed under the houses. These bones were perhaps seen as preserving the life force (Carlie 2004:115-116, 135-136; Hukantaival 2007a:8-10). This kind of practice was considered to be acceptable because everybody, even religious people, used magic. Some rituals could be understood as witchcraft but building offerings were seen as legal magic (Hukantaival 2007:70c).

Since parts of the skull (and teeth) were used for protective purposes in the houses one could argue that they had the same meaning also in the graves. The teeth, often the only thing preserved from the skulls and found in the grave fillings could have protected the deceased or his soul. Teeth were the most frequently found in the fillings of both Luistari and in Finno. The datings from Finno depict late Middle Ages which could fit in with the interpretation of a protective purpose.

Although cattle teeth were mostly found in the graves in Finno also some large ungulate and mammal long bones were found. In Luistari most of the animal bones found in the filling were teeth from meat production animals such as cattle, sheep or goat and pig, but also horse bones. The bones are mainly teeth or parts of the skull but occasionally also long bones and parts of the chest area. The long bones might represent animals that Falk mentions as being placed in houses, but in this case placed to the graves as offerings.

Complete animals could become placed in building deposits, according to Falk (Falk 2006:201). The complete dog skeletons found close to the deceased in Luistari might also have a protective purpose in the grave, although the dog remains are dated to the Iron Age.

6.4 Previous or succeeding use of the site

It is important to remember that the place itself may have had other functions before it became a graveyard. If a dwelling place was situated there prior to the burials, animal bones would already be in the soil. That could explain why animal bones are found in the filling and the surroundings of graves. Thus the bones might be offal or rests of bone handling. Some examples of this are given below.

6.4.1 The Church of the Holy Spirit

In the excavation of the church of the Holy Spirit the animal bones were not documented, even though some bones were found. The animal bones collected from the graves and the surrounding soil had traces of butchery. These bones were of suitable age and the anatomical distribution (chapter 5.2.3) suggests that they actually derive from the surrounding soil. Thus they are probably not placed there with intention (see e.g. Sigtuna museum 2006). This notion is quite logical taking into account that Turku was a growing town at that time and people had been living on the site prior to the graveyard. The cut marks in the bones, the age distribution and the bones left on the site might refer to a house where animals have been kept and slaughtered. The use of axe for butchering may be more wasteful than separating meat from the bones by a knife, but it is quicker and does not require as much experience as knife handling (O'Connor 2000:166). Keeping animals in towns seems to have been common during the Middle Ages (see e.g. Tesch 2007:88-89).

6.4.2 The Cathedral of Porvoo

In the cathedral of Porvoo documentation was done only of those animal bones found in the graves (chapters 5.4.2 and 5.4.3). In one grave (an adult) the fish bones could possibly derive from the last supper. The other fish bones, found in graves of children, could have ended up in there from the surrounding graveyard soil. The author also noticed that the animal bones were scattered around the soil in a similar manner as the human bones were. The human bones were probably from old graves that had become dug up in order to get room for new burials. The animal remains could have been in the soil from previous stages of site utilization. It has also been reported tahat dogs scattered half rotten bodies in the churchyard during the 17th century (see chapter 5.4.1). They could also have been transporting offal from the surrounding town environment to the cemetery and thus producing animal bone material to the graveyard soil.

6.4.3 Suotniemi

The fish (and bird) bones found in Käkisalmi might derive from previous site usage. The bones found near grave 2 and E of grave 4, as well as the fish bones described to be scattered around the burial area, could have been there before the use of the site for burials. The documentation is unfortunately very poor but the fish and bird bones found in grave 5 could support this interpretation. Also the anatomical distribution of the bones originates from fish handling at the site. A better documentation could perhaps able other interpretations. Fish bones are found in Stone Age graves in Zvejnieki in Latvia where they were traced back to a dwelling place near the site. Soil, which contained fish bones, was consciously brought to the graves from the dwelling place (Zagorskis 2004:79; Larsson 2010). It is also possible that similar conscious sampling was done

in Suotniemi.

Some of the cattle teeth found in the top layers, for example in graves 1 and 4, could be an indication of a later use of the site. The soil seems to be a much later formation than the grave but a more detailed description of the layers is needed to confirm this interpretation.

6.4.4 Luistari

In Luistari there is one occasion where the filling was described to belong to the nearby dwelling site (grave 245). The grave was situated in the outskirts (see figure 4. and Lehtosalo-Hilander 1982a:176) of the cemetery and the soil was described to be coloured by coal. The cattle teeth found in the filling would in this case derive from a dwelling place. The teeth seemed to be in equally good condition as the teeth from the Iron Age burials even though the dwelling site was dated to the Bronze Age. This makes me suspect the previous interpretation of the imported dwelling site soil.

Ulla Tupala has recorded some incidents where animal bones were thrown to refuse heaps and to dunghills. From there the bones would be carried with the manure to the fields (Tupala 1999:15). If the graves were situated on land that was later used as fields then the upper parts of the graves would become disturbed by ploughing and animal bones could become scattered to the graves. This kind of action might explain why bones from meat producing animals are found in the topsoil in Luistari (appendix 2.) which were of meat producing animals. The scattering of bones would have occurred after the active use of the burial place. The explanation would not, on the other hand, explain teeth in the grave filling as Tupala (1999:40) has suggested.

6.5 Animal burials

Dead animals could be buried nearby the settlement sites in order to dispose of the carcasses. Fields would often be chosen for this purpose because the soil was easy to handle but animals could also be buried in forests or meadows (Tupala 1999:13).

6.5.1Visulahti

The cattle found from Visulahti had only the posterior parts of the skeleton left, the rest of the body probably had probably become decomposed. The excavation drawingsindicate by the placing of the animal, that it was buried complete. The burial was dug through other graves, which means that the human bones found there probably derive from previous graves. The burial was not regular in shape, which means that Taavitsainen is probably right in his hypothesis of an

animal burial compared to Leppäaho's offering theory. However, the date of the cattle burial is unclear. Because the cattle bones have not been radiocarbon dated the only clues for its age can be found in the preservation of the bones. Among the cattle bones is also a human humerus which is in almost the same condition as the cattle remains. This indicates that the burials had occurred almost simultaneously. The animal burial might in this case be from late Iron Age or Medieval period if the dating of the inhumation burials to Iron Age is correct. To solve the matter the bones should be subjected to ^{14}C dating.

6.5.2 Luistari

Also the unfurnished graves 260 and 262 in Luistari are possible animal burials. Grave 260 is described to be of irregular shape, and at least two sheep or goats were found in the burial (appendix 2.). The burial was situated on the outskirts of the cemetery. The grave had apparently not destroyed other graves so they might have been marked in some way when the animals were buried. In other words the burial place could have still been in use. It is also possible that the inhumation graves remained untouched only by accident (see discussion of cultural factors in chapter 2.2). In grave 262 some cattle teeth were found 10-15 cm from the bottom of the grave which might imply an animal burial. Also in an uncertain furnished grave 161 the placing of the skull, mandible and humerus of a horse could be interpreted as an animal burial, although, the context is uncertain.

6.6 Changes in time

Luistari was the only site where the burial tradition seemed to cover several time periods from Merovingian period (AD 550-800) to possibly medieval period (unfurnished graves). Dogs were almost solely found in the furnished graves, mostly from the Viking Age but some from the Crusade period. One dog bone was even found in an unfurnished grave. The anatomical representation of the bones is similar in all of the graves. Horses are often seen as sacrificial animals especially in cremation burials (e.g. Sten & Vretemark 1988), but in Luistari they are found only in unfurnished graves.

The teeth of the meat production animals in Luistari were located in the interpreted grave and in the filling. The anatomical parts found in the fillings and interpreted graves are almost the same during the Viking Age and in unfurnished graves (figure 21. appendix 3.). It is also possible that because the deceased (or the objects belonging to him/her) was not found the animal bones in the unfurnished graves were interpreted to be from the filling instead of the interpreted grave. This might suggest that from Merovingian period to the medieval period the animals had had a similar function in the graves. Also the orientation of the graves where the animal bones were found was similar to the graves oriented without animal remains. Graves 245 and 262 were unfurnished but dug in S-N orientation like the Viking Age graves 75 and 330 which contained

animal bones. These graves could imply that if the unfurnished graves were Christian they could have older traditions incorporated with the Christian mortuary behaviour.

The animal bones in Finno were from 15th-16th centuries but the context of the bones refers to grave goods or commemoration meals. Commemoration meals involving animals are only recorded in eastern Finland. On the other hand burials in village and hamlet cemeteries were supposed to end during the 13th century (chapter 4.2 and literature cited). Finno and another hamlet in Espoo, Kauklahti (swe. *Köklax*), seem to have burials dating to the late medieval period (Haggrén *et al.* 2004, see also Uotila 2007 for hamlet burials). If the burials continued near these hamlet settlements, even though they were not supposed to according to the canonical laws, then it is possible that "pagan" ways (chapter 3.2 and 4.3) such as burying animals to the graves continued as well.

The burials in the cemetery of the church of Holy Spirit probably began in the 16th century. In contrast to the bones found in Finno, the animal bones here do not seem to belong to the graves, even though they are roughly from the same time period. Obeying the laws might have been more typical in towns, such as Turku, than in the countryside. Turku is situated on the south-western coast and Finno on the southern coast which might have influenced the differences in burial traditions.

The material from Porvoo is a late town burial compared to the rest of the material. Animal bones do occur but their origin is probably much closer to the material from Turku than to the rest of the sites. The problem with the town materials in this study is the lack of documentation.

Visulahti is part of eastern Finland at the moment, but it can also be regarded as part of western Finland because it had been part of Sweden since 1323 (chapter 3.3). It is, however, difficult to know whether Catholic/Lutheran or Orthodox tradition was followed in the burials rituals (or if they even differed). Suotniemi, on the other hand, is situated in an Orthodox area (chapter 3.3) but the documentation is insufficient to find out whether commemoration meals, typical for the tradition (chapters 4.3 and 4.4), did occur.

7. Conclusions

The aim of this Master's thesis was to interpret animal bones in graves and to find out whether changes had occurred in depositions from different time periods. This has never been thoroughly explained before. Some of the material was previously interpreted, but it was unsatisfactory and fragmentary. The focus had been solely on the deceased and on the animal bones found in graves.

Animal bones from six sites were subjected to this study. The remains from the sites showed that they could be interpreted in multiple ways compared to what was previously done. For example the animal bones in the filling in Luistari were previously discarded as unrelated to the burial.

In my interpretations animals can actually be linked with mortuary behaviour. Animals could be eaten as ritual meals or they could be part of a food offering or sacrifice (also cited as companions). Previous usage of these sites could also bring animal remains into burials, and animals could also be disposed of in separate pits. Especially skulls could have been placed in the graves with a protective aim.

These interpretations are not without problems. The context descriptions are vague in most cases, or some sites have no context documented for the animal bones. The fact that the bones do not preserve in the Finnish soil makes the interpretations more plausible than confirmed. If only the hardest substance of the bone, the tooth enamel, is preserved, it is impossible to know how much of the animal was originally placed in the grave.

Ritual meals were previously regarded as a possible explanation to animal bones found in graves because of the eastern Finnish folklore. But if the bones were teeth or parts of skulls these explanations were easily discarded. Animal heads were previously not considered to be food that would be eaten or left for the dead. Only parts of animals that were rich in flesh were considered to be worth eating, even though the skull can in some cultures even today be seen as very tasty. Yet, Theodor Schwindt saw nothing abnormal in the idea of placing an animal head for the dead to feast upon inside the grave. This might be due to differences in eating habits between generations.

In Luistari the furnished graves were interpreted to be from late Iron Age. The animal bones which were found in the vicinity of the deceased were thus understood as part of the grave context. Teeth (mostly from cattle) were found in the filling of the unfurnished graves in Luistari and in Finno, but also occasionally in the filling of the furnished graves in Luistari. At least in Finno the graves are from the 15th and 16th centuries. This time period is clearly a time of Christian burial tradition. Also the unfurnished graves in Luistari are dated as Christian. This suggests that the placing of animal heads in graves could be cult continuity. Recently it has been discovered that the hamlet burials seem to continue after the 13th century. Pre-Christian rites could therefore also continue longer than was previously thought. The possibility of a testament cow should also be considered as possible cult continuity.

The animal bones from the cemetery in Turku indicate a late town burial where the site was in intense use for hundreds of years. The anatomical representation, species and cut marks are typical osteological material from medieval towns. The material shows a clear difference between the rural areas and the towns. Also the scattered remains from Porvoo indicate that they derive from a previous or contemporary settlement, although some of the fish bones could have been intentionally placed in the graves as some sort of food offering. The same could be said of the material in Käkisalmi.

The almost complete cattle and sheep or goat skeletons found in Visulahti and Luistari suggest separate animal burials but because of the lack of sufficient ^{14}C datings, the precise time of burial cannot be resolved. The cattle burial from Visulahti could have been buried already during late Iron Age or Medieval period.

Until now, the assumption has been that the eastern and western burial traditions have differed at least regarding the meals eaten on graves. The western part of Finland is described to follow the Catholic tradition where meals are not part of the funerals. This means that animal bones should not be found in the graves. In the eastern parts of Finland where the Orthodox tradition is followed and meals are still eaten on graves in Karelia as late as the 20th century, animal bones have a logical explanation when found in the graves.

However, this study suggests that this was not the case; even though the study material concerning eastern Finland was not optimal. The poor context descriptions might have influenced the result. Yet, when choosing a sample for this study I went through a number of excavation reports written on eastern burial tradition deposits, and none of them mentioned animal bones in grave contexts. This could indicate a lack of interest in animal bones among excavating archaeologists but can also be an indication of a real lack of animals deposited in the graves. The eastern burials were often excavated during the late 19th and early 20th century with seemingly rough methods which might explain the absence of animal bones. In order to get a more accurate picture, a larger sample size from the same time periods is needed.

It is interesting that the only bones which imply that meals were actually eaten at funerals or offered to the deceased come from the western coast of Finland (Luistari and Finno). This, together with the occurrence of hamlet burials as late as the 15th century, could indicate a more relaxed attitude towards pre-Christian traditions during Christianity. Thus, it is possible that the burial tradition which lived on for centuries in Estonia would in fact have also continued in Finland for longer than has previously been thought. However, as stated in chapter 4.5 the tradition of drinking coffee during funerals and bringing flowers to the graves can be traced back to the time when people were eating meals on funeral occasions and on commemoration days.

This study has brought new ideas and emphasis to the study of animal remains in inhumation graves from late Iron Age to the 18th century through six case studies. Although, the sample size is limited, the study shows the importance of animal bones in interpreting human mortuary behaviour. The custom of depositing animals in graves can be seen as continuity from late Iron Age graves, a custom that might have lived on to modern burials. The reason for depositing animals in graves could have varied and have different meanings. The difference between the eastern and western burial traditions may not have been as significant as previously thought.

This work is hopefully a beginning to future studies concerning animal bones in graves. There are some sites on the list (appendix 1.) which have a fairly good animal bone material, at least based on the excavation reports. These sites are for example Eura (Lehtosalo-Hilander 1968, 1976; Vilkkula & Strandberg 1986), Nastola (Sarvas & Sarkki 1974; Sarkki 1975) and Ylöjärvi (Sarkki 1976). In addition, a more detailed osteological study should be done in for example Luistari. Butchery marks, if found, in the bones could give clues to the use of animals in the graves.

Also soil pH should be studied in detail with a larger sample. Soil pH affects bone preservation and for the time being the lack of bone material is blamed on quick decomposition time caused by a low pH value. There might, however, be significant differences in pH in different sites. Know-

ing the differences could help interpretations of the sites. Hopefully future excavations will also deliver more detailed data for osteologists and collaboration with osteologists during field work (which is still rare in Finland) is also desirable. The importance of a detailed documentation, also of the animal bones, is a key factor in interpretation of archaeological and osteological material.

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Appendix 1. List of Graves

The list of graves contains information from two databases on the www-pages of the Finnish National Board if Antiquities. The information from the two databases is combined in this list. All same information was not available. **Register** refers to the numerical code which the site can be found in the databases. All of the sites do not hava a cone, for example the sites from the Karelian Isthmus are not recorded to the databases because they are on the Russian side of the border. The databases have information only of sites that are at present on the Finnish soil. **Place** refers to the parish, city or town. The place names are written based on the situation at 17.2.2009. After that some municipalities have consolidated and the place names have changed. The placenames which were changed before the 17th February are shown in brackets. The reports are most likely to be found in the Archives of the National Board of Antiquities with the original name of the place. **Site** refers to the name given to the site or the name which the site is best known by. **Dating** is not necessarily the actual dating of the site. It refers to the date mentioned in the databases which can be quite roughly determined. **Type** refers to the type of the site mentioned in the databases, and subtype restectively the subtype of the type of site mentioned in the databases. The **subtype** in not mentioned in all of the cases because it is absent in some of the site descriptions. **Research history** contains all the investigation done on the site, mostly field investigation. Sometimes detailed information was difficult to come by. The years when excavations and trial excavations were conducted is also mentioned. If **osteological analyses** are available and done from the site the analyser (and the analysis year) is noted in this column.

The list was updated last time 24.4.2009.

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
5500006	Alajärvi	Alajärvi Panula Hautasaarenmäki	Historical	burial place	summer burials	mention	
10500019	Alavus	Rantatöysä Kalmoniemi	Historical	burial place	churchyards	field survey	
10500008	Alavus	Ollila Riihimäki	Historical	burial place	massgraves	mention	
10500003	Alavus	Kuotesjärvi Rumissaari	Historical	burial place	summer burials	mention	
10500004	Alavus	Jääskänjärvi Rumissaari	Historical	burial place	summer burials	mention	
10500005	Alavus	Ranta-Töysän järvi Kalmoniemi	Historical	burial place	islet burials	mention	
10500031	Alavus	Ollila Ollinojan penkka	Historical	burial place	undetermined	mention	
10500006	Alavus	Kirkkojärvi Tusansaari	Historical	burial place	islet burials	mention	
754500007	Anjalankoski	Korvenkylä Vähä-Pasila	Historical	burial place	churchyards	inspection	
15010004	Artjärvi	Pekko	undated	burial place	summer burials	mention	
17010001	Asikainen	Nunnamäki	Iron Age and/or Medieval	burial place	cemeteries	field survey	
18010059	Askola	Kalmistomäki	Iron Age and/or Medieval	burial place	cemeteries	excavation v.-51, field survey, inspection	
1000012636	Askola	Monninkylän hautausmaa	Historical	burial place	churchyards	field survey	
19000003	Aura	Sillankorvantie	Historical	burial place	cemeteries	inspection, field survey	
40500007	Dragsfjärd	Vänön Vanha hautausmaa	Historical	burial place	churchyards	field survey	
8580	Dragsfjärd	Kyrksundet Kyrkogården	Iron Age and/or Medieval	monument of antiquity	undetermined	excavation -39, trialexcavation-38	
40500004	Dragsfjärd	Björkhomen	Historical	burial place	undetermined	mention	
1000007598	Elimäki	Ratula Hautapelto	Historical	burial place	cemeteries	field survey	
1000007599	Elimäki	Ratula Vanhala	Historical	burial place	cemeteries	field survey	
1000007600	Elimäki	Raussila Männismäki	Historical	burial place	cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000007593	Elimäki	Kuusela	Historical	burial place	massgraves	field survey	
KM 54140	Elimäki	Vanha kirkon paikka				excavation 1954	
45010012	Eno	Sarvinki Halla	Historical	burial place	cemeteries	field survey	
45010010	Eno	Nesterinsaari Kalmis-toniemi	Historical	burial place	Orthodox cemeteries	field survey	
45500004	Eno	Kousanniemi Ollukkalan kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
45500002	Eno	Kuusjärvi Manninsaari	undated	burial place	undetermined	excavation v.-14	
1000000869	Eno	Kuusjärvi Manninsaari	Historical	burial place	islet burials	excavation v.-14	
45500005	Eno	Revonkylä Venälä	Historical	burial place	Orthodox cemeteries	field survey	
1000009522	Enontekiö	Peltojärvi Saari Haut-aniemi	Historical	burial place	undetermined	inspection	
1000004932	Enontekiö	Näkkäläjärvi Ruumis-saari	Historical	burial place	islet burials	mention	
408	Espoo	Espoon kirkko	Medieval	churches and cemeter-ies	?	excavation -81,-82	
1000001829	Espoo	Finno	Historical	dwelling place	hamlet sites	excavation 2006, field survey	H.Kivikero (06)
7130, 7114	Espoo	Kauklahti	Medieval/undetermined	settlement and livelihood	?	excavation 2003,trialexcava-tion 2002	
50010002	Eura	Kuivarinta	Stone Age	burial place	cemeteries	inspection, field survey	
50010015	Eura	Vähä-Vahe	Iron Age	burial place	cemeteries	field survey	
50010025	Eura	Yli-Nuoranne	Iron Age	burial place	cemeteries	trialexcavation v.-34,-77,-88, excavation -65,-66,-67, field survey, inspection	
50010026	Eura	Eläinlääkärin tontti	Iron Age	burial place	cemeteries	excavation v.-65,-70,-88,-92, trialexcavation -74,-77, field survey, inspection	
50010028	Eura	Vainionmäki	Iron Age	burial place	cemeteries	excavation v.1898, trialexca-vation -80,-85, field survey, inspection	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
50010029	Eura	Pappilanmäki	Iron Age	burial place	cemeteries	excavation v.1890, 1927,-34,-39, field survey, inspection	
50010030	Eura	Lauhianmäki	Iron Age	burial place	cemeteries	excavation v.1890, field survey	
50010031	Eura	Vähässuonmäki	Iron Age	burial place	undetermined	field survey	
50010044	Eura	Mikkolanmäki	Iron Age	burial place	undetermined	inspection, field survey	
50010032	Eura	Luistari	Bronze Age and/or Iron Age	groups of antiquities	undetermined	excavation1969-72,-77,-79,-84,1986-92,trialexcavation -87, inspection	M.Fortelius, L.Blomqvist
6201	Eura	Osmanmäki	Iron Age	prehistorical cemeteries	?		
6443, 5700	Eura	Vähävahe Kaunismäki	Iron Age	prehistorical cemeteries	?		
52500030	Evijärvi	Evijärvi Ruumissaari	Historical	burial place	islet burials	undetermined	
1000006669	Haapavesi	Ursanniemi	Historical	burial place	undetermined	inspection	
359, 376, 388	Hailuoto	Kirkonpaikka	Medieval	churches and cemeteries	?	excavation -85,-86,-87	
73500001	Halikko (Salo)	Seppälä Pyhäloukas	Historical	burial place	churchyards	mention	
73010035	Halikko (Salo)	Lampola Pajapelto	Iron Age and/or Medieval	burial place	undetermined	inspection, field survey	
73010022	Halikko (Salo)	Rikalanmäki (Kylämäki)	Bronze Age and/or Iron Age	groups of antiquities	undetermined	excavation -50,-51,-53,-77,-78, trialexcavation -50,-90, mapping, inventionti, inspection	
74500001	Halsua	Halsuanjärvi Ruumissaari	Historical	burial place	islet burials	mention	
KM 6471	Hammarland	Kirkko				excavation 1913	
917010008	Hamina	Kylänpää	Stone Age	burial place	undetermined	excavation -50,-51, inspection, field survey	
	Hamina	Vehkalahden kirkko	Historical	churches and cemeteries	?	trialexcavation -63	
1000004922	Hankasalmi	Armisvesi Saunasaari	Historical	burial place	churchyards	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000004921	Hankasalmi	Armisvesi Myssyrä	Historical	burial place	islet burials	mention	
77010016	Hankasalmi	Venekoski Ruumissaari	Historical	burial place	islet burials	trialexcavation -92	
77010017	Hankasalmi	Kovalanmäki Ruumissaari	Historical	burial place	islet burials	inspection	
78010007	Hanko	Kapalbackan	Historical	burial place	churchyards	trialexcavation -81,2006	K.Mannermaa (06)
78500001	Hanko	Tulliniemi	Historical	burial place	undetermined	mention	
1000007211	Hanko	Länsisatama	Historical	burial place	churchyards	mention	
KM 7988	Hanko	Hankoniemen Vapaasatama				excavation 1921	
82010012	Hattula	Kirkkomäki 1	Iron Age and/or Medieval	burial place	cemeteries	excavationv. 1894, trialexcavation 1937, mapping,field survey, inspection	
82010023	Hattula	Vesitorninmäki	Iron Age	burial place	cemeteries	excavation v.1968, field survey	
82010025	Hattula	Hinnonmäki (Surmanmäki)	Iron Age	burial place	cemeteries	mapping, inspection, field survey	
8503	Hattula	Pyhän Ristin kirkko	Historical	churches and cemeteries	?	excavation -75	
84500001	Haukipudas	Kello Kropsu	Historical	burial place	islet burials	mention	
186	Haukipudas	Haukiputaan kirkko	Historical	churches and cemeteries	?	field survey	
KM 80107	Haukipudas	Halosenniemi					
88500002	Heinola	Soimakangas	Historical	burial place	churchyards	mention	
1000004940	Heinävesi	Varisvesi Kalmosaari	Historical	burial place	islet burials	field survey, Ruohonen 07?	K.Salo (07)
1000004942	Heinävesi	Juurikkaselkä Kalmosaari	Historical	burial place	islet burials	field survey, Ruohonen 07?	K.Salo (07)
1000004936	Heinävesi	Pieni Vihtari Kalmosaari	Historical	burial place	islet burials	field survey, Ruohonen 07?	K.Salo (07)
1000003620, 7236	Helsinki	Santahamina Maanpuolustuskorkeakoulu	Historical	churches and cemeteries/ burial place	churchyards	mention, survey 2004	E-K.Lahti (04)

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
592, 593	Helsinki	Vanhankaupunki	renessance	churches and cemeteries	?	excavation -30,-31	
Karelia	Hiitola	Hannola Ierikkä					
Karelia	Hiitola	Kilpola Hannukainen					
98010014	Hollola	Kirkailanmäki	Iron Age and/or Medieval	burial place	cemeteries	excavation v.-35,-36,-79,-91, trialexcavation -79,-87,-91, field survey, inspection	
98010015	Hollola	Hälvälä	Iron Age	burial place	cemeteries	inspection, field survey	
8521, 8505, 8449	Hollola	Hollolan kirkko	Historical	churches and cemeteries	?	excavation -34, survey	
638	Hollola	Kirkkotarha	undetermined	churches and cemeteries	?	survey	
102010003	Huittinen	Kappelinmäki	Iron Age	burial place	cemeteries	excavation -51, inspection, field survey	
102010012	Huittinen	Riposuo	Stone Age	burial place	cemeteries	excavation -16, field survey	
102010017	Huittinen	Yli-Jaakkola	Iron Age	burial place	cemeteries	inspection, field survey	
8532	Huittinen	Huittisten kirkko	Historical	churches and cemeteries	?	excavation -58	
283010003	Hämeenkoski	Santahaudanmäki	Iron Age	burial place	cemeteries	excavation -64, trialexcavation -84,-86, inspection, field survey	
8510, 419	Hämeenkoski	Vanha kirkko	Medieval/renessance	churches and cemeteries	?	excavation -62, trialexcavation -61	
113, 114, 32, 153, 622, 690, 7042	Hämeenkoski	Pyhän Laurin kirkkoraunio	Medieval/undetermined	churches and cemeteries	?	excavation -98,-99,-00,-01,-02, trialexcavation -96,-97	(01), A.Tourunen (02)
108010015	Hämeenkyrö	Peltoniemi	Stone Age	burial place	undetermined	field survey	
810010002	Hämeenlinna	Kalvola Pahnainmäki	Iron Age	burial place	cremation cemeteries	excavation -11,-13, field survey	
8497, 8496, 8498	Hämeenlinna	Hauhon kirkko	Historical	churches and cemeteries	?	survey, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
483	Hämeenlinna	Hämeenlinnan kirkko	Medieval	churches and cemeteries	?	excavation -84	
8496, 7669	Hämeenlinna	Tuuloksen kirkko	Medieval	churches and cemeteries	?	survey	
8610	Hämeenlinna	Rengon kirkko	Historical	churches and cemeteries	?	excavation 1984, 2008	K.Salo (08)
83010022	Hämeenlinna (Hauho)	Männistönmäki	Iron Age and/or Medieval	groups of antiquities	undetermined	excavation -33, trialexcavation -99, field survey	
83010004	Hämeenlinna (Hauho)	Kalomäki 2	Iron Age	groups of antiquities	undetermined	excavation -70-72, trialexcavation -69, inspection, field survey	
140500003	Iisalmi	Porovesi Kumpusaari	Historical	burial place	islet burials	mention	
142010006	Iitti	Kananoja	Iron Age	burial place	cemeteries	loose find, field survey	
142010025	Iitti	Kalmuniemi	Iron Age	burial place	cemeteries	loose find, inspection, field survey	
142500003	Iitti	Haapakimola	Historical	burial place	churchyards	mention	
1000007607	Iitti	Kontinkangas	Historical	burial place	massgraves	field survey	
145500001	Ilmajoki	Renko Soukajoki Ruissaari	Historical	burial place	islet burials	mention	
145500031	Ilmajoki	Jouppila Ala-Piirto	Historical	burial place	undetermined	mention	
14550014	Ilmajoki	Peltoniemi Vaivaistennevan kytö	Historical	burial place	undetermined	mention	
146010055	Ilomantsi	Putkela Ihanus	Historical	burial place	cemeteries	inspection, field survey	
146500026	Ilomantsi	Putkela Turpeela	Historical	burial place	churchyards	field survey	
1000005235	Ilomantsi	Kontiovaaran Raatosaari	Historical	burial place	summer burials	mention	
146010046	Ilomantsi	Kirkonkylä Kokonniemi	Historical	burial place	Orthodox cemeteries	field survey	
146010047	Ilomantsi	Kirkonkylä Pappilanvaara	Historical	burial place	Orthodox cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
146010048	Ilomantsi	Kuuksenvaara Kalmist-opelto	Historical	burial place	Orthodox cemeteries	field survey	
146010049	Ilomantsi	Maukkula Kaunislahti	Historical	burial place	Orthodox cemeteries	field survey	
146010050	Ilomantsi	Maukkula Puustinvaara	Historical	burial place	Orthodox cemeteries	field survey	
146010051	Ilomantsi	Mekrijärvi Kalmistoloso	Historical	burial place	Orthodox cemeteries	field survey	
146010052	Ilomantsi	Mutalahti Riihimäki	Historical	burial place	Orthodox cemeteries	field survey	
146010053	Ilomantsi	Ostronsaari Jeskala	Historical	burial place	Orthodox cemeteries	field survey	
146010054	Ilomantsi	Patrikka Kolmikanta	Historical	burial place	Orthodox cemeteries	field survey	
146010056	Ilomantsi	Ryökkylä Niemelä	Historical	burial place	Orthodox cemeteries	field survey	
146010057	Ilomantsi	Sonkaja Autio	Historical	burial place	Orthodox cemeteries	field survey	
146010058	Ilomantsi	Sonkaja Lahti	Historical	burial place	Orthodox cemeteries	field survey	
146010059	Ilomantsi	Tokrajärvi Kalmistolahti	Historical	burial place	Orthodox cemeteries	field survey	
146010060	Ilomantsi	Tyrjänsaari Kalmotranta	Historical	burial place	Orthodox cemeteries	field survey	
146010061	Ilomantsi	Viinivaara Aarnela	Historical	burial place	Orthodox cemeteries	field survey	
146010063	Ilomantsi	Hattuvaara Kuusikko	Historical	burial place	Orthodox cemeteries	field survey	
146010064	Ilomantsi	Hattuvaara Meroja	renessance	burial place	Orthodox cemeteries	field survey	
146010065	Ilomantsi	Koitere Raatosaari/Ka-lmotsaari	Historical	burial place	islet burials	field survey	
146010066	Ilomantsi	Naarvanjärvi Matinsaari	Historical	burial place	islet burials	field survey	
146500018	Ilomantsi	Huhus Liepala	Historical	burial place	Orthodox cemeteries	field survey	
1000011427	Inari	Mutusniemi länsi	Historical	burial place	undetermined	mention	
148500007	Inari	Kyrö Ivalojoki Ulkusaari	Historical	burial place	islet burials	mention	
150010012	Iniö	Kyrgårdsgärda	Historical	burial place	churchyards	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
150010014	Iniö	Norröarna	Historical	burial place	churchyards	mention	
151500013	Isojoki	Vanhakylä Mäntymäki Saarikko	Historical	burial place	undetermined	field survey	
152500039	Isokyrö	Napue Perttilä	Historical	burial place	massgraves	mention	
152500045	Isokyrö	Seljänkangas Arosara	Historical	burial place	undetermined	field survey	
8528, 8435, 433	Isokyrö	Vanha kirkko	Medieval/Historical	churches and cemeteries	?	excavation -53, survey	
152010020	Isokyrö	Leväluhta	Iron Age	cult and tale	lähteet	excavation 1886,-94, 1912,-13,-82,-83, field survey	T.Formisto
Karelia	Jaakkima	Miinala Töru					
Karelia	Jaakkima	Sorola Haakana					
165010026	Janakkala	Kinnari 1	Iron Age	burial place	cemeteries	excavation -30, inspection,field survey	
165010030	Janakkala	Kirkkomaa	Iron Age	burial place	cemeteries	excavation -53, inspection, field survey	
165010047	Janakkala	Makasiininmäki	Iron Age	burial place	cemeteries	excavation -50,-54,inspection, mapping, field survey	
165010052	Janakkala	Vähä-Kurki	Iron Age	burial place	cemeteries	inspection, field survey	
165010053	Janakkala	Sipilä	Historical	burial place	cemeteries	inspection, field survey	
856010006	Joensuu	Öllölä Öllölänniemi	Historical	burial place	massgraves	inspection, field survey	
167010008	Joensuu	Kukkosensaari/Kuhasalo	Historical	burial place	Orthodox cemeteries	field survey	
856010005	Joensuu	Öllölä Pörtsämö	Historical	burial place	Orthodox cemeteries	field survey	
856500002	Joensuu	Kovero Kirkkopelto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002735	Joensuu	Kalmistopelto	Historical	burial place	Orthodox cemeteries	field survey	
251500001	Joensuu	Keskijärvi Variksensaari	Historical	burial place	islet burials	field survey	
251500004	Joensuu	Heinävaara Hassila	Historical	burial place	undetermined	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
251500005	Joensuu	Oskola Oskolanhovi	Historical	burial place	undetermined	field survey	
251500007	Joensuu	Löytöjärvi Kalmonsaari	Historical	burial place	islet burials	mention	
856500004	Joensuu	Konnunniemi Surusärkkä	Historical	burial place	undetermined	field survey	
856010004	Joensuu	Savilahti Suvensaari	Historical	burial place	islet burials	field survey	
436	Jomala	Jomala kyrka	Medieval	churches and cemeteries	?	excavation -61	
KM 5662	Jomala	Kyrkobacken				excavation 1910	
17150001	Joroinen	Sysmänjärvi Kalmasaari	Historical	burial place	islet burials	mention	
172500002	Joutsa	Laitjärvi Huiska	Historical	burial place	undetermined	mention	
1000004206	Joutsa	Hautasaari	Historical	burial place	undetermined	excavation -80	
1000001603	Juankoski	Vuotjärvi Kalmonsaari	Historical	burial place	islet burials	mention	
1000001608	Juankoski	Vuotjärvi Kalmansaari	Historical	burial place	islet burials	mention	
174010015	Juankoski	Suuri Kalmosaari	Historical	burial place	undetermined	inspection	
176000001	Juuka	Harakkamäki Kalmoniemi	Historical	burial place	Orthodox cemeteries	field survey	
176000009	Juuka	Kirkonkylä Hyttilä	Historical	burial place	Orthodox cemeteries	mention	
176000003	Juuka	Pentinniemi Vanhala	Historical	burial place	islet burials	field survey	
176000004	Juuka	Raholanjärvi Suuret Kalmosaaret	Historical	burial place	islet burials	field survey	
176000005	Juuka	Rauanjärvi Kalmosaaret	Historical	burial place	islet burials	field survey	
1000003271	Juuka	Halijärvi Kalmosaari	Historical	burial place	islet burials	mention	
176000008	Juuka	Vuokko Pyötikkö	Historical	burial place	undetermined	field survey	
1000001776	Juuka	Ylä-Ruokonen Kalmosaaret	Historical	burial place	islet burials	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000001777	Juuka	Vaikkojärvi Kalmosaari	Historical	burial place	islet burials	field survey	
1000001778	Juuka	Raholanjärvi Pieni Kalmosaari	Historical	burial place	islet burials	field survey	
178010004	Juva	Remojärvi Kappelinpelto	Historical	burial place	cemeteries	excavation -72,-73,-07, field survey, inspection	K.Salo (07)
178500004	Juva	Salajärvi Mykkyläsaari	Historical	burial place	massgraves	mention	
178500003	Juva	Hietajärvi Kalmasaari	Historical	burial place	islet burials	mention	?
178500005	Juva	Rautjärvi Ruumissaari	Historical	burial place	islet burials	mention	
178500006	Juva	Salajärvi Luuniemi	Historical	burial place	undetermined	mention	
178500007	Juva	Savivesi Ruotsinsaari	Historical	burial place	islet burials	mention	
1000007370	Jyväskylä	Cygnaeuksenpuisto	Historical	burial place	churchyards	trialexcavation -02	
182010010	Jämsä	Kirkonmäki	Iron Age	burial place	cemeteries	trialexcavation -89, inspection	
202010018	Kaarina	Nuutila	undated	burial place	cemeteries	inspection, field survey	
202010026	Kaarina	Ravattula Ristimäki	Iron Age and/or Medieval	burial place	cemeteries	inspection, field survey	
1000001789	Kaavi	Melttusvirta	Historical	burial place	massgraves	inspection, field survey	
1000013105	Kaavi	Nuottalahti	Historical	burial place	undetermined	mention	
1000001788	Kaavi	Lehtosaari	Historical	burial place	islet burials	mention	
1000001790	Kaavi	Kalmonniemi	Historical	burial place	islet burials	mention	
1000001791	Kaavi	Suuri Hautasaari	Historical	burial place	islet burials	mention	
208500013	Kalajoki	Vasankari Lanterinmäki	Historical	burial place	undetermined	mention	
208500014	Kalajoki	Vasankari Kaakkurinmäki	Historical	burial place	undetermined	mention	
210010011	Kalvola	Urheilukenttä	Iron Age	burial place	cemeteries	trialexcavation -51, mapping, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
211010022	Kangasala	Liuksialan kappeli	Iron Age	burial place	cemeteries	inspection, field survey	
KM 8776	Kangasala	Sakariston jäännös	Historical			excavation 1927	
1000004925	Kangasniemi	Kolmipohja Ruumisniemi	Historical	burial place	churchyards	mention	
1000004923	Kangasniemi	Kaituri Ruumissaari	Historical	burial place	islet burials	mention	
1000004924	Kangasniemi	Ylemmäinen Ruumissaari	Historical	burial place	islet burials	mention	
1000004926	Kangasniemi	Kutemajärvi Lamposaari	Historical	burial place	islet burials	mention	
216500002	Kannonkoski	Vuosjärvi Kalmusaari	Historical	burial place	islet burials	mention	
265500001	Kannonkoski	Kivijärvi Lintusaari	Historical	burial place	islet burials	mention	
1000002786	Karjalohja	Ekhammarinpellot	Historical	burial place	churchyards	inspection	
1000003275	Karttula	Saittajärvi Kalmonsaari	Historical	burial place	islet burials	field survey	
227500003	Karttula	Kuttajärvi Kalmonsaari	Historical	burial place	islet burials	field survey	
227500004	Karttula	Pieni Tallusjärvi Kalmonsaari	Historical	burial place	islet burials	mention	
233010006	Kauhava	Perttulanmäki	Stone Age	burial place	cemeteries	excavation -30,field survey	
Karelia	Kaukola	Koverila Kulhamäki					
Karelia	Kaukola	Koverila Kekomäki					
Karelia	Kaukola	Säppäis Ruuska					
1000007340	Kemi	Vallitunsaari	Historical	burial place	churchyards	mention	
KM 36152?	Kemi	Tervaharju Sotilashauta 1808-09				excavation 1935	
320010138	Kemijärvi	Morkkasaari	Historical	burial place	summer burials	mention	
320010114	Kemijärvi	Termussaari	Historical	burial place	islet burials	inspection, field survey	
320010005	Kemijärvi	Kalmanniemi	Historical	burial place	undetermined	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8434, 834, 8589, 187	Keminmaa	Vanha kirkko	Medieval/renessance/ undetermined	churches and cemeteries	?	excavation -94, field survey	
KM 47062	Keminmaa	Haminansaari				excavation 1947	
8579, 8580, 40010027	Kemiönsaari	Kyrksundet Kyrkogården	Iron Age and/or Medieval/ Historical	groups of antiquities/ churches and cemeteries	undetermined/?	excavation-39,-91-97, trialexcavation -38,field survey	
1000011004	Kempele	Metsärinteen puisto	Historical	burial place	massgraves	field survey	
248500003	Kesälahti	Villala Ristimäki	Historical	burial place	cemeteries	inspection, field survey	
1000006164	Kesälahti	Kirkonkylän vanha hautausmaa	Historical	burial place	church burials	field survey	
248010013	Kesälahti	Kirkonkylä Kerelin kalmistopelto	Historical	burial place	Orthodox cemeteries	field survey	
1000006174	Kesälahti	Suurenkylän kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
1000006175	Kesälahti	Villala Tervaniemi	Historical	burial place	Orthodox cemeteries	field survey	
1000008003	Kesälahti	Kiurusaari	Historical	burial place	undetermined	inspection	
250500001	Kihniö	Nerkoonjärvi Iso-Selkäsaari	Historical	burial place	islet burials	mention	
252500002	Kiikala	Rekijoki Halkionahde	Historical	burial place	undetermined	mention	
256010008	Kiikoinen	Marjajärvi Hirvennokka	Historical	burial place	undetermined	mention	
1000007246	Kirkkonummi	Räfsö 2	Historical	burial place	churchyards	inspection, field survey	
1000007296	Kirkkonummi	Kyrkogårdsön Norrudden	Historical	burial place	churchyards	field survey	
8538, 8485, 8473, 8484	Kirkkonummi	Kirkkonummen kirkko	Medievalnen/Historical/ renessance	churches and cemeteries	?	excavation -56, trialexcavation -93, survey	
260010031	Kitee	Loukunvaara Kalmistonmäki	Historical	burial place	cemeteries	field survey	
1000006488	Kitee	Suorlahti Kalmanmäki	Historical	burial place	churchyards	field survey	
260010028	Kitee	Säynejärvi Marttila	Historical	burial place	Orthodox cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
260010029	Kitee	Muljulan kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
260010030	Kitee	Kiteenlahti Kalmistola	Historical	burial place	Orthodox cemeteries	field survey	
1000003118	Kitee	Kiteenlahti Hernevaara	Historical	burial place	Orthodox cemeteries	field survey	
1000003120	Kitee	Niinikumpu Hovi	Historical	burial place	Orthodox cemeteries	field survey	
1000003121	Kitee	Papinniemi	Historical	burial place	Orthodox cemeteries	mention	
1000003122	Kitee	Auvisen palsta	Historical	burial place	Orthodox cemeteries	mention	
1000003124	Kitee	Hatunvaara	Historical	burial place	Orthodox cemeteries	field survey	
1000006477	Kitee	Heinoniemi Everstinkangas	Historical	burial place	Orthodox cemeteries	field survey	
1000006478	Kitee	Juurikkajärvi Kalmistola	Historical	burial place	Orthodox cemeteries	field survey	
1000006479	Kitee	Herrala	Historical	burial place	Orthodox cemeteries	field survey	
1000006481	Kitee	Riihijärvi Kalmistonmäki	Historical	burial place	Orthodox cemeteries	field survey	
1000006482	Kitee	Rokkala Kalmistopelto	Historical	burial place	Orthodox cemeteries	field survey	
1000006483	Kitee	Ruppovaara Kalmalampi	undetermined	burial place	Orthodox cemeteries	field survey	
1000006489	Kitee	Suorlahti Kalmoniemi	Historical	burial place	Orthodox cemeteries	field survey	
1000006491	Kitee	Varmonniemi Kalmonniemi	Historical	burial place	Orthodox cemeteries	field survey	
261010053	Kittilä	Kurjenpolvi	Historical	burial place	cemeteries	excavation -93, mapping, inspection	
1000000917	Kittilä	Vierelä	Historical	burial place	summer burials	field survey	
208	Kittilä	Kittilä 53	renessance	churches and cemeteries	?	excavation -93	
263500003	Kiuruvesi	Koivujärvi Kalmonsaari	Historical	burial place	islet burials	mention	
1000003295	Kiuruvesi	Koivujärvi Huutsaari	Historical	burial place	islet burials	mention	
1000003294	Kiuruvesi	Kiuruvesi Kalmonsaari	Historical	burial place	islet burials	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000003296	Kivijärvi	Kivijärvi Kalmosaaret	Historical	burial place	islet burials	mention	
271010001	Kokemäki	Kalvomäki	Iron Age	burial place	cemeteries	excavation -24,-25, trialexcavation -83, field survey	
271010027	Kokemäki	Maamieskoulu 1	Iron Age	burial place	cemeteries	excavation -24,-25, trialexcavation -83, field survey	
	Kokemäki	Ylistaro Leikkimäki					
8571	Kokemäki	Kokemäen kirkkomaa	renessance	churches and cemeteries	?	photographic documentation	
271010029	Kokemäki	Kirkkovainio	Iron Age	burial place	cemeteries	excavation -10, field survey	
8565	Kokkola	Kaarelan kirkko	Historical	churches and cemeteries	?	excavation -54	
275500001	Konnevesi	Konnevesi Hautasaari	Historical	burial place	islet burials	mention	
276500009	Kontiolahti	Selkie Kalmonniemi	Historical	burial place	churchyards	field survey	
276010004	Kontiolahti	Suoniemi	Historical	burial place	Orthodox cemeteries	field survey	
276500002	Kontiolahti	Selkie Päntön saari	Historical	burial place	Orthodox cemeteries	field survey	
276500004	Kontiolahti	Mönni Kalmonniemi	Historical	burial place	undetermined	field survey	
1000002681	Kontiolahti	Pajamäki	Historical	burial place	Orthodox cemeteries	field survey	
1000002682	Kontiolahti	Romppala	Historical	burial place	Orthodox cemeteries	field survey	
1000002690	Kontiolahti	Rantala	Historical	burial place	Orthodox cemeteries	field survey	
277000002	Korpilahti	Kirkkosaari	Historical	burial place	islet burials	field survey	
1000007242	Kotka	Kymin kappeli	Medieval	burial place	churchyards	trialexcavation -03, field survey	K.Salo (03)
1000007609	Kotka	Kottaraisentie 20	Historical	burial place	churchyards	field survey	
1000007610	Kotka	Sokeritehdas	Historical	burial place	churchyards	field survey	
1000007611	Kotka	Mussalo Santaniemi	Historical	burial place	churchyards	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000007608	Kotka	Karhula Härkävuori	Historical	burial place	Orthodox cemeteries	inspection, field survey	
285010040	Kotka	Koivisniitynmäki	Stone Age	burial place	undetermined	excavation -68, loose find, field survey	
1000008256	Kouvola	Kuivala, Kiperinmäki	renessance	burial place	churchyards	mention	
750010002	Kristiinankaupunki	Sideby-Kyrkoskäret	Historical	burial place	churchyards	field survey	
1000005537	Kuhmo	Jonkerin Kalmosaaret	Historical	burial place	summer burials	mention	
1000011962	Kuhmo	Saunajärvi Kälkäsen Kalmosaari	Historical	burial place	islet burials	inspection	
290010005	Kuhmo	Hamarasaari	undated	burial place	islet burials	field survey	
290010006	Kuhmo	Lapinniemi	undated	burial place	undetermined	field survey	
290010018	Kuhmo	Kalmoniemi	Historical	burial place	undetermined	inspection, field survey	
290500001	Kuhmo	Lammasjärvi Koposensaari	Historical	burial place	islet burials	mention	
290500002	Kuhmo	Kellojärvi Korpisaari	Historical	burial place	islet burials	mention	
290500006	Kuhmo	Vieksi Saarivaara	Historical	burial place	undetermined	mention	
291010006	Kuhmoinen	Linden	Iron Age	burial place	cemeteries	trialexcavation -21, field survey	
291500006	Kuhmoinen	Kissakulma Hautaniittu	Historical	burial place	churchyards	mention	
297500003	Kuopio	Väinölänniemi Piispanpuisto	Historical	burial place	churchyards	inspection	
297500004	Kuopio	Jännevirta Jännesaari	Historical	burial place	islet burials	mention	
Karelia	Kurkijoki	Kuuppala Räkköläisen Kalmistonmäki					
Karelia	Kurkijoki	Rahola Kuusikkomäki					
303500003	Kuru	Puntaskylä Puntasjärvi	Historical	burial place	summer burials	mention	
305010073	Kuusamo	Lehtoniemi	Historical	burial place	cemeteries	excavation -70, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
305010075	Kuusamo	Iso-Pöyliö	Historical	burial place	cemeteries	inspection, field survey	
1000006678	Kuusamo	Suininki Ruumissaari	Historical	burial place	islet burials	field survey	
1000006130	Kuusankoski	Keltti Pellontaustantie	Historical	burial place	cemeteries	field survey	
1000001511	Kyyjärvi	Pölkki Suokannanlahti	Historical	burial place	summer burials	mention	
Karelia	Käkisalmi	Suotniemi					
316500003	Kärkölä	Järvelä Radanrakentajien kalmisto	Historical	burial place	churchyards	mention	
1000005441	Kärkölä	Hevonoja Kolu	Historical	burial place	burial mounds	inspection	
450	Kökar	Kökar kyrka	undetermined	churches and cemeteries	?	excavation -92	J.Storå (92)
KM 37132?	Kökar	Fransiskaanikonventin alue				excavation 1937	
319010015	Köyliö	Yttilänotta	Iron Age	burial place	cemeteries	excavation-73,05, inspection, field survey	
319010017	Köyliö	Vanhakartano (Luodonpää A-kalmisto)	Iron Age	burial place	cemeteries	excavation -33,-34, field survey	
319010018	Köyliö	Vanhakartano (Meijeri eli B-kalmisto ja ns. Lallin kalmisto eli C-kalmisto)	Iron Age	burial place	cemeteries	excavation -26,-26,-34,-38, field survey, inspection	
319010020	Köyliö	Kirkkoniemi	Medieval	burial place	undetermined	field survey	
398010005	Lahti	Tiilipirtti	Stone Age	burial place	cemeteries	loose find, inspection, field survey	
398010006	Lahti	Myllysaari	Iron Age	burial place	cemeteries	loose find, inspection, field survey	
398010008	Lahti	Ylä-Kokkola 1	Iron Age	burial place	cemeteries	excavation -78, loose find, inspection, field survey	
1000005463	Laitila	Ryssänmäki	Historical	burial place	massgraves	inspection, field survey	
1000005394	Laitila	Pahaistenkirkonmäki	Historical	burial place	undetermined	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
7607	Laitila	Laitilan kirkko	Historical	churches and cemeteries	?	excavation -67	
401010002	Lammi	Nisula (Hannula)	Iron Age	burial place	cemeteries	inspection, field survey	
407500002	Lapinjärvi	Kirkonkylä Självspillings-grop	Historical	burial place	churchyards	mention	
1000013134	Lapinlahti	Pajuharjuntie 16	Historical	burial place	massgraves	mention	
405010012	Lappeenranta	(Kauskila) Kappelinmäki	Iron Age and/or Medieval	burial place	cemeteries	excavation -53,-99,-00,-02,-03,-04,-05, trialexcavation -97,-01, irtolöytö, inspection, field survey	
1000007974	Lappeenranta	Pallon hautausmaa	Historical	burial place	churchyards	trialexcavation -07, mapping	
1000007994	Lappeenranta	Huhtiniemi	Historical	burial place	massgraves	excavation -06	
651, 7743	Lappeenranta	Linnoitus	undetermined/Historical	churches and cemeteries	?	excavation 2007, survey	A.Tourunen (00),K.Salo (07)
410010052	Laukaa	Kapeenkoski	Iron Age	burial place	summer burials	inspection	
410010032	Laukaa	Kynsivesi Ruumissaari	Historical	burial place	islet burials	inspection	
1000004931	Laukaa	Kynsivesi Tuomarinsaari	Historical	burial place	islet burials	mention	
6469, 5971, 6104	Laukaa	(Kuusvesi) Hartikka	Stone Age	prehistorical cemeteries	?	trialexcavation -87,-88,-89	
5244	Laukaa	Savio Harjukangas	undetermined	prehistorical cemeteries	?	trialexcavation 1996	
414500001	Lehtimäki	Länsikylä Pinniäinen	Historical	burial place	summer burials	mention	
414500002	Lehtimäki	Kilpakangas	Historical	burial place	summer burials	mention	
418010009	Lempäälä	Lempoinen	Iron Age	burial place	cremation cemeteries	excavation -71, mapping, field survey, inspection	? Formisto Lempäälä
459	Lempäälä	Lempäälän kirkko	undetermined	churches and cemeteries	?	excavation -83	
1000000262	Lemu	Alastalo	Iron Age and/or Medieval	burial place	cemeteries	field survey	
420000014	Lemu	Toinen talo	Historical	burial place	cairns	inspection	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
420000016	Lemu	Mäntyharju 2	Historical	burial place	undetermined	field survey	
919500001	Lemu	Suvasvesi Hulkko	Historical	burial place	islet burials	mention	
1000006446	Lestijärvi	Kirkkosaari	Historical	burial place	undetermined	field survey	
422500018	Lieksa	Nurmijärvi Kalmonniemi	Historical	burial place	churchyards	field survey	
422010040	Lieksa	Lontsinniemen kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
422010043	Lieksa	Kitsinkylän Kalmosaari	Historical	burial place	Orthodox cemeteries	field survey	
422500010	Lieksa	Savijärvi Lievola	Historical	burial place	Orthodox cemeteries	mention	
422500016	Lieksa	Lieksanjoki Reponiemi	Historical	burial place	Orthodox cemeteries	field survey	
422500017	Lieksa	Pankajärvi Metelinsaari	Historical	burial place	Orthodox cemeteries	field survey	
1000004610	Lieksa	Varpasensaari Kalmoniemi	Historical	burial place	Orthodox cemeteries	field survey	
422500014	Lieksa	Viekinjärvi Raatosaari	Historical	burial place	islet burials	mention	
422500002	Lieksa	Polvijärvi Kalmosaari	Historical	burial place	islet burials	mention	
1000003317	Lieksa	Pankajärvi Kalmosaari	Historical	burial place	islet burials	mention	
423010010	Lieto	Ristinpelto	Iron Age and/or Medieval	burial place	cemeteries	excavation -05,-49,-50, trialexcavation -73, inspection, field survey	
423010063	Lieto	Knaapin hiekkakuoppa	Stone Age	burial place	cemeteries	trialexcavation -00,-03, inspection	
423010029	Lieto	Hulkkunanmäki	multiperiod	groups of antiquities	undetermined	excavation -33,-34,-72, loose find, field survey, inspection	
423010052	Lieto	Karvala	Iron Age	groups of antiquities	undetermined	inspection, field survey	
5173	Lieto	Vanhalinna Aittomäki	Iron Age	prehistorical cemeteries	?	excavation -95	
8514, 8583	Lieto	Liedon kirkko	Historical	churches and cemeteries	?	excavation -70, survey	
426000025	Liperi	Itraniemi	Historical	burial place	Orthodox cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
426000026	Liperi	Lappilanniemi	Historical	burial place	Orthodox cemeteries	field survey	
426010064	Liperi	Ristimäki	Historical	burial place	Orthodox cemeteries	field survey	
426500001	Liperi	Lammunjärvi Kalmasaari	Historical	burial place	islet burials	mention	
426500024	Liperi	Siikasalmi	Historical	burial place	undetermined	loose find	
737010007	Lohja	Tapiola	Historical	burial place	burial mounds	inspection, field survey	
8512,7609	Lohja	Lohjan kirkko	Historical	churches and cemeteries	?	excavation -66, trialexcavation -65	
1000000534	Loimaa	Ala-Juonikka	Iron Age	burial place	cemeteries	field survey	
1000010039	Loviisa	Begravningsholmen	Historical	burial place	undetermined	field survey	
705500001	Länsi-Turunmaa	Ominaisholmen - Omenainen	Historical	burial place	islet burials	mention	
150010014	Länsi-Turunmaa	Norröarna	Historical	burial place	churchyards	mention	
150010012	Länsi-Turunmaa	Kyrgårdsgärda	Historical	burial place	churchyards	mention	
8520	Länsi-Turunmaa	Paraisten kirkko	renessance	churches and cemeteries	?	excavation -27	
8493	Länsi-Turunmaa	Korppoon kirkko	Historical	churches and cemeteries	?	excavation -52	
8568	Länsi-Turunmaa	Nauvon kirkko	Historical	churches and cemeteries	?	excavation -57	
310,245	Länsi-Turunmaa	Attu Kapelludden	Medieval	churches and cemeteries	?	trialexcavation -89, -90	
6594	Maalahti	Kopparbacken	Iron Age	prehistorical cemeteries	?	trialexcavation -97	Formisto, Ukkonen
8508	Marttila	Marttilan kirkon kirkkomaa	Medieval	churches and cemeteries	?	excavation 1937	
480010001	Marttila	Mäntsälä	Iron Age	burial place	undetermined	inspection	
1000000262	Masku	Alastalo	Iron Age and/or Medieval	burial place	cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
17010001	Masku	Nunnamäki	Iron Age and/or Medieval	burial place	cemeteries	field survey	
8515	Masku	Maskun kirkko	Historical	churches and cemeteries	?	trialexcavation -75	
	Masku	Kirkkomaa	undetermined	churches and cemeteries	?	survey	
481010002	Masku	Humikkala	Iron Age	burial place	undetermined	excavation -25,-64, trialexcavation -73,-84, inspection, field survey	
491010003	Mikkeli	Visulahti kalmisto	Iron Age	burial place	cemeteries	excavation -54,-55, 78,-81	
491010006	Mikkeli	Närepelto	Iron Age	burial place	cemeteries	trialexcavation -93, tarkastu, field survey	
491010007	Mikkeli	Tuukkala	Iron Age	burial place	cemeteries	excavation 1886,1933,-34, inspection	
1000002319	Mikkeli	Rantala	Iron Age	burial place	cemeteries	inspection	
14010001	Mikkeli	Luonteri Lehessaari	Historical	burial place	churchyards	field survey	
492500001	Mikkeli	Kotalahti Sotisaari	renessance	burial place	churchyards	mention	
14010001	Mikkeli	Luonteri Lehessaari	Historical	burial place	churchyards	field survey	
1000006650	Mikkeli	Munninsaari	Historical	burial place	islet burials	field survey	
491010002	Mikkeli	Kivisakasti	Iron Age and/or Medieval	burial place	undetermined	field survey	
498010047	Muonio	Muuraissaarenmulkku	Historical	burial place	summer burials	field survey	
490010021	Mynämäki	Harainen	Historical	burial place	massgraves	field survey	
490010017	Mynämäki	Kotopellonmäki	Historical	burial place	summer burials	field survey	
503010005	Mynämäki	Frantilannummi-Junttilannummi	Iron Age	groups of antiquities	undetermined	inspection, ei tiedossa	
8547	Mynämäki	Mynämäen kirkko	Historical	churches and cemeteries	?	excavation -59	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
464	Mynämäki	Kirkko Torni		churches and cemeteries	?	excavation -60	
1000004602	Mäntsälä	Kerämäki	Historical	burial place	churchyards	mention	
535, 537	Naantali	Luostarinalue	Medieval	churches and cemeteries	?	excavation 1872, 1910	
1927	Naantali	Rymättylän kirkko	renessance	churches and cemeteries	?	survey	
537, 463, 175, 104, 105, 274, 102, 34, 146, 7159, 7365, 7477	Naantali	Naantalin kirkko	undetermined/Medieval	churches and cemeteries	?	excavation -63,-96,-97, trialexcavation 2003,-05, survey, mapping	
1000005127	Nastola	Hautasaari	Historical	burial place	islet burials	field survey	
532010006	Nastola	(Ruuhijärvi) Ristimäki	Iron Age	burial place	cemeteries	excavation -08,-09,-16,-73,-74, field survey	
532010007	Nastola	Harakkamäki	Iron Age	burial place	cemeteries	excavation -73,-90, inspection, field survey	
536010021	Nokia	Hakamäki	Iron Age	burial place	cemeteries	excavation -22, inspection, field survey	
536010024	Nokia	Ketolanmäki	Iron Age	burial place	cemeteries	inspection, field survey	
1000006703	Nokia	Pitkäniemen hautausmaa	renessance	burial place	churchyards	mention	
538000013	Nousiainen	Pahan ämmän mäki	Iron Age and/or Medieval	burial place	undetermined	inspection	
538010005	Nousiainen	Moision Myllymäki	Iron Age	burial place	undetermined	excavation -30,-34,-35-37, inspection, field survey	
8518,466	Nousiainen	Nousiaisten kirkko	Medieval/Historical	churches and cemeteries	?	excavation -97, survey	
541500002	Nurmes	Lipinlahti Lipinsaari	Historical	burial place	churchyards	field survey	
541500003	Nurmes	Höljäkkä Ukonniemi	Historical	burial place	churchyards	field survey	
541500008	Nurmes	Saramo Jokihaara	Historical	burial place	churchyards	field survey	
541010011	Nurmes	Kuohattijärvi Kalmosaari	Historical	burial place	summer burials	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
541010012	Nurmes	Mujejärvi Kalmoniemi	Historical	burial place	Orthodox cemeteries	field survey	
541500009	Nurmes	Saramo Määttälä	Historical	burial place	Orthodox cemeteries	field survey	
541500012	Nurmes	Kuohattijärvi Sikosaari	Historical	burial place	islet burials	mention	
541010013	Nurmes	Karsikkoselkä Saunasaari	Historical	burial place	undetermined	field survey	
541010014	Nurmes	Savikylä Koivistola	Historical	burial place	undetermined	field survey	
541010016	Nurmes	Mujejärvi Kalmosaari	Historical	burial place	undetermined	field survey	
541500006	Nurmes	Salmi Saunasaari	Historical	burial place	undetermined	field survey	
541500007	Nurmes	Savikylä Koivistola	Historical	burial place	undetermined	field survey	
1000013259	Nurmijärvi	Sienistö	Historical	burial place	churchyards	mention	
1000013261	Nurmijärvi	Leppäkorpi	Historical	burial place	churchyards	mention	
8519	Närpiö	Närpiön kirkko	Historical	churches and cemeteries	?	survey	
1000008065	Oravainen	Storkärr	Historical	burial place	massgraves	undetermined	
1000003182	Orimattila	Mallusjoki Salustenkulma	renessance	burial place	massgraves	trialexcavation -04	
1000003719	Oripää	Tanskilankangas	Historical	burial place	massgraves	trialexcavation -05, field survey	
1000003721	Oripää	Melskan töykkä	Historical	burial place	massgraves	field survey	
176, 7055	Oulu	Tuomiokirkko	renessance	churches and cemeteries	?	excavation -96, 2002	H.Maijanen (02)
309010027	Outokumpu	Rikkavesi Kalmasaari	Historical	burial place	undetermined	field survey	
576500008	Padasjoki	Auttoinen Kotkansiipi Honttihauta	Historical	burial place	massgraves	mention	
576010003	Padasjoki	Saksala Pikkumäki	Iron Age	burial place	Orthodox cemeteries	field survey	
8479, 8491	Padasjoki	Padasjoen kirkko	Historical	churches and cemeteries	?	survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000009504	Paltamo	Tarnala Jyrkilä	Historical	burial place	cemeteries	field survey	
1000002195	Parikkala	Kalmansaari	Historical	burial place	islet burials	field survey	
1000002198	Parikkala	Joukio Kalmanpelto	Historical	burial place	cemeteries	inspection, field survey	
1000002202	Parikkala	Kinnarniemi Loikkasen kalmisto	Historical	burial place	cemeteries	inspection, field survey	
1000002209	Parikkala	Uukuniemi Luoso	Historical	burial place	cemeteries	inspection, field survey	
1000002211	Parikkala	Niukkala Hovila	Historical	burial place	cemeteries	field survey	
1000002213	Parikkala	Uukuniemi Haaponiemi	Historical	burial place	cemeteries	loose find?	
1000002214	Parikkala	Honkakylä Karinmäki	Historical	burial place	cemeteries	mention	
1000002215	Parikkala	Maironiemi Kalmanpelto	Historical	burial place	cemeteries	field survey	
1000002216	Parikkala	Maironiemi Penttilä	Historical	burial place	cemeteries	mention	
1000002217	Parikkala	Tarnala Juhana Kalmanpellot	Historical	burial place	cemeteries	field survey	
1000002218	Parikkala	Joensuu Kangaspeuhkuri	Historical	burial place	cemeteries	field survey	
1000002219	Parikkala	Joukio Ristiharju	Historical	burial place	cemeteries	loose find?	
1000002220	Parikkala	Rasvaniemi Miihkamäki	Historical	burial place	cemeteries	field survey	
1000002221	Parikkala	Tyrjä Kalmistomäki	Historical	burial place	cemeteries	field survey	
1000002212	Parikkala	Niukkala Kukkuri	Historical	burial place	massgraves	field survey	
1000001516	Parikkala	Rautalahti Ridan kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002185	Parikkala	Kumpu Kalmistonrinne	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002186	Parikkala	Uukuniemi Papinniemi Kirkkokallion kalmisto	Historical	burial place	Orthodox cemeteries	excavation -98,-99,-00,-01,-02, inspection, field survey	
1000002193	Parikkala	Mikkolanniemi Kalmistonniemi	Historical	burial place	Orthodox cemeteries	inspection, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000002194	Parikkala	Saarenkylä Loson kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002197	Parikkala	Joensuu Kalmistonmäki	Historical	burial place	Orthodox cemeteries	field survey	
1000002199	Parikkala	Joukio Sammatlammen kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002201	Parikkala	Järvenpää Surkko	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002203	Parikkala	Kinnarniemi Poralin kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	
1000002204	Parikkala	Koitsanlahti Kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
1000002205	Parikkala	Koitsanlahti Kuusikkomäki	Historical	burial place	Orthodox cemeteries	field survey	
1000002206	Parikkala	Oravaniemi Kalmistomäki	Historical	burial place	Orthodox cemeteries	field survey	
1000002207	Parikkala	Rautalahti Jorosen kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
1000002210	Parikkala	Tarnala Kalmistonniemi	Historical	burial place	Orthodox cemeteries	field survey	
990010040	Pedersöre (Ähtävä)	Esse-Nådjärv	Iron Age	burial place	undetermined	excavation -91,-93, loose find, inspection	
595500004	Peilavesi	Pielavesi Pangansalo	Historical	burial place	undetermined	mention	
595500003	Peilavesi	Säviänvirta Virtasaari	Historical	burial place	undetermined	mention	
595010068	Peilavesi	Pielavesi Kalmasaari	Historical	burial place	undetermined	field survey	
1000013326	Pelkosenniemi	Luiron kesähautapaikka	Historical	burial place	summer burials	field survey	
1000011384	Pelkosenniemi	Manolaissaari 2	Historical	burial place	islet burials	inspection, field survey	
1000007233	Perho	Kalmasaari	Historical	burial place	undetermined	inspection	
1000007231	Perho	Ruumissaari	Historical	burial place	summer burials	inspection	
1000001540	Pernaja	Västervikskogen	Historical	burial place	hautakummut	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8525, 8531	Pernaja	Pernajan kirkko	Historical/renessance	churches and cemeteries	?	trialexcavation -38, field survey	
592500002	Petäjävesi	Petäjävesi Kuoliosaari	Historical	burial place	islet burials	mention	
592500005	Petäjävesi	Ala-Kintaus Kuoliosaari	Historical	burial place	islet burials	mention	K.Salo (07)
592500007	Petäjävesi	Kuivasmäki Kuoliokynnys	Historical	burial place	summer burials	mention	
	Petäjävesi	Mustiainen					K.Salo (07)
184500001	Pieksämäki	Hiukkanen Kalmaniemi	Historical	burial place	churchyards	mention	
1000004930	Pieksämäki	Hietakylä Ruumissaari	Historical	burial place	islet burials	mention	
1000004927	Pieksämäki	Pyhäjärvi Ruumissaari	Historical	burial place	islet burials	mention	
1000004928	Pieksämäki	Ruokojärvi Ruumissaari	Historical	burial place	islet burials	mention	
1000004929	Pieksämäki	Eteläselkä Ruumissaari	Historical	burial place	islet burials	mention	
184010005	Pieksämäki	Syvänsi Kuoresaari	Historical	burial place	islet burials	field survey	
184010006	Pieksämäki	Syrjäjärvi Kalmansaari	Historical	burial place	islet burials	field survey	
184010004	Pieksämäki	Syvänsi Kaidansaari	Historical	burial place	islet burials	field survey	
8526, 8527	Pietarsaari	Pedersören kirkko	Medieval/Historical	churches and cemeteries	?	excavation -50, undetermined	
390	Pietarsaari	Maaseurakunnan kirkko	renessance	churches and cemeteries	?	excavation -85	
607010013	Polvijärvi	Sotkuma Orthodoxka-Imisto	Historical	burial place	Orthodox cemeteries	excavation -99, trialexcavation -98, mapping,field survey	
609010062	Pori	Santakangas	Stone Age	burial place	cemeteries	inspection, field survey	
257	Pori	Leppäkorpi	esihistoria	churches and cemeteries	?	excavation -92	
611000011	Pornainen	plagueon kuolleiden muistomerkki	Historical	burial place	massgraves	mention	
613010068	Porvoo	Hagnäs kyrkogård	Historical	burial place	cemeteries	inspection, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000011740	Porvoo	Pirttisaari	Historical	burial place	churchyards	field survey	
529, 530, 533, 534, 476, 7574	Porvoo	P.Marian kirkko/Tuomiokirkko	Medieval/Historical/undetermined	churches and cemeteries	?	excavation -48, 56, 77, 78, 2007	K.Salo (07)
614010034	Posio	Lotanniemi	Historical	burial place	churchyards	inspection, field survey	
614010068	Posio	Sarvisaari	Historical	burial place	churchyards	field survey	
614010067	Posio	Purjesaari (Raatosaari)	Historical	burial place	summer burials	field survey	
614010098	Posio	Yli-Suolijärvi Ruumissaari 1	Historical	burial place	summer burials	field survey	
614010110	Posio	Yli-Suolijärvi Ruumissaari 2	Historical	burial place	summer burials	field survey	
614010138	Posio	Vihtasaari	Historical	burial place	summer burials	field survey	
1000008461	Posio	Ala-Suolijärvi Ruumissaari	Historical	burial place	summer burials	field survey	
1000008462	Posio	Haapasaari	Historical	burial place	summer burials	field survey	
1000008493	Posio	Vellikannansaari	Historical	burial place	summer burials	field survey	
1000008494	Posio	Oivanjärvi Korkeasaari	Historical	burial place	summer burials	field survey	
1000008497	Posio	Jaakkimonsalmi	Historical	burial place	summer burials	field survey	
1000008503	Posio	Antinsaari	Historical	burial place	summer burials	field survey	
1000008508	Posio	Hakkusaari	Historical	burial place	summer burials	field survey	
1000008509	Posio	Kirnuharju	Historical	burial place	summer burials	field survey	
1000008512	Posio	Sammalsaari	Historical	burial place	summer burials	field survey	
1000008515	Posio	Ammesaari	Historical	burial place	summer burials	field survey	
615010015	Pudasjärvi	Isosaari	Historical	burial place	summer burials	loose find, inspection	
615500003	Pudasjärvi	Jaurakaisjärvi Sotisaari	Historical	burial place	islet burials	mention	
615010044	Pudasjärvi	Lapinsaari	Historical	burial place	undetermined	inspection, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
618500002	Punkaharju	Moinniemi Laamalan-mäki	Historical	burial place	undetermined	mention	
620010022	Puolanka	Katamonniemi	Historical	burial place	summer burials	inspection, field survey	
620010045	Puolanka	Huosiusniemi S	Historical	burial place	summer burials	inspection	
620010024	Puolanka	Ristijärvi Kirkkosaari	Historical	burial place	islet burials	field survey	
620010046	Puolanka	Piltunginjärvi Kalmon-saari	Historical	burial place	undetermined	inspection	
620010027	Puolanka	Lylyjärvi Kalmosaari	Historical	burial place	islet burials	field survey	
1000007622	Pyhtää	Laukkanen	Historical	burial place	churchyards	field survey	
1000007623	Pyhtää	Rahakivi	Historical	burial place	churchyards	field survey	
1000011351	Pyhtää	Kaunissaari Pohjaspää	Historical	burial place	churchyards	mention	
1000007621	Pyhtää	Palokangas	Historical	burial place	summer burials	field survey	
8569, 8535	Pyhtää	Pyhtään kirkko	Historical	churches and cemeter-ies	?	survey 1907	
1000006555	Pyhäjoki	Ylitalo	Historical	burial place	cemeteries	inspection	
632000002	Pyhäselkä	Haavanpää 2 Pylölä	Historical	burial place	Orthodox cemeteries	field survey	
635010011	Pälkäne	Ristiänmäki	Iron Age	burial place	cemeteries	excavation -51,-54,-83, in-spection, field survey	
1000001977	Pälkäne	Oksala Kylänniemi	Historical	burial place	undetermined	field survey	
7612, 13, 689, 7132, 7753	Pälkäne	Rauniokirkko	Medieval/Historical/re-nessance	churches and cemeter-ies	?	excavation 2001, -03, trialex-cavation 1992, -98, survey	
477	Raahe	Saloinen Kirkkoluoto	Medieval	churches and cemeter-ies	?	trialexcavation -88	
8495	Raasepori	Karjaan kirkko	Historical	churches and cemeter-ies	?	excavation -37	
8511, 8478	Raasepori	Tenholan kirkko	Medieval/Historical	churches and cemeter-ies	?	excavation -85, survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8548	Raasepori	Pohjan kirkko	Historical	churches and cemeteries	?	excavation -50	
1000012705	Raasepori	Busö Jussarö 2	Historical	burial place	churchyards	field survey	
KM 58020	Raasepori	Tammisaaren kirkko					
478	Raisio	Raision kirkko	Historical	churches and cemeteries	?	excavation -68	
680010001	Raisio	Kansakoulunmäki	Iron Age	burial place	cemeteries	excavation-58,-59,-60, trialexcavation -95, loose find, inspection, field survey	
	Raisio	Mahittula					
683500009	Ranua	Simojärvi Hautasaari	Historical	burial place	islet burials	mention	
683500007	Ranua	Ranuanjärvi Pirttisaari	Historical	burial place	islet burials	mention	
683010105	Ranua	Toljanjärvi Rynkänssaari	Historical	burial place	islet burials	mention	
683010107	Ranua	Kivijärvi Juhannussaari	Historical	burial place	islet burials	mention	
683010108	Ranua	Luiminkajärvi Palosaari	Historical	burial place	islet burials	mention	
683500004	Ranua	Toljanjärvi Ruumissaari	Historical	burial place	islet burials	field survey	
683010083	Ranua	Luiminkajärvi Kalliosaari	Historical	burial place	islet burials	field survey	
683010087	Ranua	Välttämönselkä Hautasaari	Historical	burial place	islet burials	field survey	
683010059	Ranua	Simojärvi Isosaari	Historical	burial place	islet burials	field survey	
683010070	Ranua	Simojärvi Venäläissaari	Historical	burial place	islet burials	field survey	
683010031	Ranua	Ranuanjärvi Ruumissaari	Historical	burial place	islet burials	inspection	
684010001	Rauma	Kartunkari I	Historical	church structures	church place	excavation 1891, inspection	
551, 552, 553, 554, 555, 480	Rauma	Pyhän Kolminaisuuden kirkko	Medieval	churches and cemeteries	?	excavation 1898, 1983, trialexcavation 1893, -95, mapping	
1000001785	Rautavaara	Tiilikka Kalmoniemi	Historical	burial place	undetermined	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000001780	Rautavaara	Ala-Luosta Kalmosaari	Historical	burial place	islet burials	mention	
1000001609	Rautavaara	Keyritty Kalmo	Historical	burial place	undetermined	mention	
1000001773	Rautavaara	Ylä-Luosta Kalmo	Historical	burial place	undetermined	mention	
1000002208	Rautjärvi	Änkilä Kalmanharju	Historical	burial place	cemeteries	field survey	
689010005	Rautjärvi	Kivijärvi Kalmaharju	Historical	burial place	Orthodox cemeteries	inspection, field survey	
Karelia	Rautu	Haapkylä Lallukka					
1000011307	Riihimäki	Hiivola Lusikkaoja	Historical	burial place	cemeteries	inspection, field survey	
699010411	Rovaniemi	Hiukka	Iron Age	burial place	cemeteries	trialexcavation -79,field survey	
699010609	Rovaniemi	Ala-Nampajärvi Nampasaari	Historical	burial place	islet burials	field survey	
700500001	Ruokolahti	Ilmajärvi Kalmasaari	Historical	burial place	islet burials	mention	
1000007678	Ruotsinpyhtää	Hamnvik	Historical	burial place	churchyards	field survey	
1000007679	Ruotsinpyhtää	Vähä-Ahvenkoski Kyyhkylä	Historical	burial place	churchyards	field survey	
1000007680	Ruotsinpyhtää	Vähä-Ahvenkoski Petjärvensalo	Historical	burial place	churchyards	field survey	
1000007681	Ruotsinpyhtää	Marby Strandbacka 1	Historical	burial place	churchyards	field survey	
1000007689	Ruotsinpyhtää	Piiparkallio	Historical	burial place	churchyards	field survey	
1000007690	Ruotsinpyhtää	Hohti	Historical	burial place	churchyards	field survey	
8506	Rusko	Ruskon kirkko	renessance	churches and cemeteries	?	excavation -27	
Karelia	Räisälä	Hovinsaari Tontinmäki					
Karelia	Räisälä	Hovin Kalmistonmäki					
Karelia	Räisälä	Ivaskanmäki Haikonen					
707010049	Rääkkylä	Huuronniemen kalmisto	Historical	burial place	Orthodox cemeteries	inspection, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
707500003	Rääkkylä	Rasivaaran kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
707500021	Rääkkylä	Oravilahti Pitkäniemi	Historical	burial place	undetermined	inspection	
Karelia	Sakkola	Arkuntanhua 4 Virolainen					
Karelia	Sakkola	Lapinlahti I Leppäsenmäki					
Karelia	Sakkola	Lapinlahti 7 Patja					
Karelia	Sakkola	Lapinlahti 4-7 Hennonmäki					
Karelia	Sakkola	Kerjänkylä					
Karelia	Sakkola	Riiskanhovi					
732010053	Salla	Kaakkurilampi	Historical	burial place	cemeteries	field survey	
732500001	Salla	Pikku Saarijärvi Ruumissaari	Historical	burial place	islet burials	mention	
73500001	Salo	Seppälä Pyhäloukas	Historical	burial place	churchyards	mention	
252500002	Salo	Rekijoki Halkionahde	Historical	burial place	undetermined	mention	
734010043	Salo	Uskelan emäkirkko	Iron Age	burial place	cemeteries	field survey	
1000009517	Salo	Takalanmetsä	Historical	burial place	churchyards	inspection	
474	Salo	Salon kirkko	Medieval	churches and cemeteries	?	excavation -62	
586010010	Salo (Perniö)	Yliskylän hautausmaa	Iron Age	burial place	burial mounds	kaisvaus 1893,-95, loose find,field survey	
8515, 8489, 14	Sastamala	Sastamalan kirkko	Medieval	churches and cemeteries	?	excavation -60, trialexcavation -76, -98	
8486, 8590, 7369	Sastamala	Tyrvään Pyhän Olavin kirkko	Medieval/Historical	churches and cemeteries	?	excavation -64, survey	
KM 60127	Sastamala	Karkun vanha kirkko					

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
912000001	Sastamala	Tyrvään vanhakirkko	Historical	church structures	church remains		
8573	Sauvo	Sauvon kirkko	Historical	churches and cemeteries	?	survey	
738010025	Sauvo	Korvala	Iron Age	burial place	cemeteries	excavation -96,-97-98,-99	
1000007755	Sauvo	Tryskä	Iron Age	burial place	cemeteries	field survey	
740500005	Savonlinna	Kivirannanselkä Kalmonsaari	Historical	burial place	islet burials	mention	
486	Savonlinna	Kosola Litmakangas	renessance	churches and cemeteries	?	excavation -89	
742010007	Savukoski	Mukkala	Historical	burial place	cemeteries	excavation -34, inspection	
1000007288	Seinäjoki	Kirkkokoski	Historical	burial place	undetermined	mention	
746500001	Sievi	Järvikylä Peltosalo	Historical	burial place	islet burials	mention	
746500002	Sievi	Järvikylä Haikosensalo	Historical	burial place	islet burials	mention	
682010001	Siikalatva	Kalmusaari	Historical	burial place	undetermined	field survey	
753500008	Sipoo	Box Ollas	Historical	burial place	undetermined	mention	
1000010887	Sipoo	Paipis (Etelä-Paippinen), Kälbacka	Historical	burial place	churchyards	mention	
753500014	Sipoo	Nickby Bråddödsbacken	Historical	burial place	plague cemeteries	field survey	
8536, 8575, 8542, 8537	Sipoo	(Sipoon(Vanha kirkko	Historical	churches and cemeteries	?	excavation -37, trialexcavation -14, 49, survey	
487	Siuntio	Siuntion kirkko	Medieval	churches and cemeteries	?	excavation -69	
1000000453	Sodankylä	Manalaispulju	undated	burial place	cemeteries	inspection	
1000000417	Sodankylä	Pirunsaari	Historical	burial place	summer burials	inspection	
759500004	Soini	Riuttonen Ruumisniemi	Historical	burial place	summer burials	mention	
762500001	Sonkajärvi	Vehmasjärvi Härkinkangas	Historical	burial place	summer burials	mention	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
762500002	Sonkajärvi	Sonkajärvi Kuoliosaari	Historical	burial place	islet burials	mention	
762500004	Sonkajärvi	Laakajärvi Murtosaari	Historical	burial place	islet burials	mention	
Karelia	Sortavala	Rasila Kalmankenkku					
765010029	Sotkamo	Lappasaari	Historical	burial place	undetermined	field survey	
489	Sund	Tranvik	renessance	churches and cemeteries	?	excavation -87	
1000008622	Suomussalmi	Hietajärvi Syvänperänsärkkä	Historical	burial place	summer burials	inspection	
777500001	Suomussalmi	Pesiönjärvi Kirkkosaari	Historical	burial place	islet burials	mention	
777500002	Suomussalmi	Kuivajärvi Kalmisaari	Historical	burial place	islet burials	mention	
777500003	Suomussalmi	Kiantajärvi Kirkkosaari	Historical	burial place	islet burials	mention	
1000005510	Suomussalmi	Yrjänäsaari	Historical	burial place	islet burials	mention	
1000005524	Suomussalmi	Hoikkasaari	Historical	burial place	islet burials	mention	
777010073	Suomussalmi	Kivisaari	Iron Age	burial place	undetermined	excavation -69,loose find	
778500001	Suonenjoki	Kuvansi Kalmansaari	Historical	burial place	islet burials	mention	
778500002	Suonenjoki	Iso Uuhijärvi Kalmasaari	Historical	burial place	islet burials	mention	
302	Taipalsaari	Kunnantalon tontti	renessance	churches and cemeteries	?	excavation -88	
832010011	Taivalkoski	Kirkkosaari	Historical	burial place	churchyards	inspection, field survey	
833500002	Taivassalo	Tuomaraistenaukko Kalma	Historical	burial place	islet burials	field survey	
834010008	Tammela	Nälkämaan kumpu	Iron Age	burial place	undetermined	excavation -50, inspection, field survey	
8543	Tammela	Tammelan kirkko	Historical	churches and cemeteries	?	survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8584	Tampere	Messukylän kirkko	Historical	churches and cemeteries	?	excavation -59	
1000002008	Tampere	Harjun hautausmaa	Historical	burial place	churchyards	mention	
837010023	Tampere	Vilusenharju	Iron Age	burial place	undetermined	excavation -61,-62,-71,-88, field survey	
846010005	Teuva	Lautamäki	Iron Age	burial place	cemeteries	excavation -58,-59, field survey	
846010043	Teuva	Komsinkangas 2	Stone Age	burial place	cemeteries	excavation -83, field survey	
848010006	Tohmajärvi	Järventaus Kirkkorinne	Historical	burial place	cemeteries	field survey	
848010007	Tohmajärvi	Peijonniemi Varola	Historical	burial place	Orthodox cemeteries	field survey	
943010002	Tohmajärvi	Patsola Kalmanloso	Historical	burial place	Orthodox cemeteries	field survey	
851500009	Tornio	Kiviranta Virkamaa	Historical	burial place	churchyards	field survey	
7346	Tornio	Tornion kirkko	Historical	churches and cemeteries	?	survey	
628	Turku	Auran panimo (linnan hautausmaa)	undetermined	churches and cemeteries	?	trialexcavation 2000	
7084	Turku	Kaerla	Prehisrory	churches and cemeteries	?	excavation 2002	N.Söderholm (02),K.Salo (63)
8576, 8582	Turku	Maarian kirkko	Historical	churches and cemeteries	?	survey	
8572, 8541, 8581	Turku	Pyhän Katariinan kirkko	Historical	churches and cemeteries	?	excavation -45, survey	
853010005	Turku	Kirkkomäki	Iron Age	burial place	cemeteries	excavation -54,-62,-83,-91,-92, trialexcavation -73,-74,-84, inspection	
853010013	Turku	Taskula	Iron Age	burial place	cemeteries	excavation -38,-54,-92, trialexcavation -89, inspection, field survey	
853010004	Turku	Ristimäki 2	Iron Age	groups of antiquities	undetermined	excavation -14,-15,-56-59, loose find, field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
853010031	Turku	Saramäki	Iron Age	burial place	cremation cemeteries	excavation -04,-05,-17,-19,-21,-55,-61,-62, loose find, inspection, field survey	
8578, 8587, 8595, 8596, 8597, 522, 523	Turku	Tuomiokirkko	Medieval/Historical	churches and cemeteries	?	excavation -22,-23,-24,-25,-76,-77, survey	
514, 517, 515, 518, 511, 512, 513, 516	Turku	Julinin tontti	Medieval/renessance/ undetermined	towns	?	excavation 1966,-75,-83,-84,-85, trialexcavation -64, mapping	K.Salo, H.Kivikero
855010009	Tuulos	Haaksivalkama	Iron Age	burial place	cemeteries	mapping, field survey	
857010008	Tuusniemi	Juojärvi Laitosaari	Historical	burial place	islet burials	inspection	
1000004935	Tuusniemi	Tuusjärvi Kalmosaari	Historical	burial place	islet burials	field survey	
863010002	Töysä	Niku-Pennala	Iron Age	burial place	cemeteries	inspection, field survey	
8475, 8474, 7644	Ulvila	Ulvilan kirkko	Historical	churches and cemeteries	?	excavation -30, trialexcavation -73, survey	
7045, 7138, 7495, 8522	Ulvila	Liikistö	Medieval	churches and cemeteries	?	excavation 2006,-08, trialexcavation -02,-03	
8465	Urjala	vuoden 1667 kirkon paikka	renessance	churches and cemeteries	?	excavation 2004	
890010050	Utsjoki	Nuvvus	Historical	burial place	churchyards	field survey	
892500001	Uurainen	Kyynämöinen Kuoliosaari	Historical	burial place	islet burials	mention	
	Uurainen	Iso-Uuraines			islet burials		K.Salo (07)
895010067	Uusikaupunki	Vähänvainionmäki	Iron Age	burial place	cemeteries	excavation 1898, 1912,-30, trialexcavation -77, inspection, field survey	
895010068	Uusikaupunki	Rintala	Iron Age	burial place	cemeteries	field survey	
1000012147	Uusikaupunki	Venäläinen hautausmaa	Historical	burial place	churchyards	mention	
785010052	Vaala	Manamansalon Vanha hautausmaa	Historical	burial place	cemeteries	excavation -89,-91	
8591	Vaasa	Mustasaaren rauniokirkko	Historical	churches and cemeteries	?	excavation -10	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8492	Valkeakoski	Sääksmäki	Historical	churches and cemeteries	?	field survey	
908010003	Valkeakoski	Toppolanmäki	Iron Age	burial place	cemeteries	excavation -36,-37,-51, field survey	
908010004	Valkeakoski	Moijanen	Iron Age	burial place	cemeteries	inspection, field survey	
	Valkeakoski	Huittula Kiilä					
8716	Valkeakoski	Jutikkala Kirkkomäki	Bronze Age	prehistorical cemeteries	?	trialexcavation 2001	
8492	Valkeakoski	Sääksmäen kirkko	Historical	churches and cemeteries	?	field survey	
1000007077	Valkeala	Ristinkangas	Historical	burial place	cemeteries	inspection	
1000008256	Valkeala	Kuivala, Kiperinmäki	renessance	burial place	churchyards	excavation -71	
911010006	Valtimo	Kylänlahti Kalmanniemi	Historical	burial place	churchyards	field survey	
911010007	Valtimo	Autiojärvi Kalmosaari	Historical	burial place	Orthodox cemeteries	field survey	
911010008	Valtimo	Vastaskankaan kalmisto	Historical	burial place	Orthodox cemeteries	field survey	
1000010339	Valtimo	Ikipiha	Historical	burial place	Orthodox cemeteries	inspection, field survey	
911500007	Valtimo	Koppelojärvi Kalmasaari	Historical	burial place	islet burials	mention	
7437, 8106	Vantaa	Pyhän Laurin kirkko	Historical/undetermined	churches and cemeteries	?	excavation 2007, trialexcavation -06	K.Salo (07)
916500003	Varpaisjärvi	Varpaisjärvi Kuoliosaari	Historical	burial place	undetermined	mention	
1000001781	Varpaisjärvi	Sälevä Iso-Kalmo	Historical	burial place	islet burials	mention	
916500005	Varpaisjärvi	Korpiskylä Koiraharju	renessance	burial place	undetermined	mention	
1000000183	Vehmaa	Kappelmäki	Medieval	burial place	undetermined	trialexcavation -02	
164	Vehmaa	Kirkonkylä	Medieval	churches and cemeteries	?	excavation -95	
7047, 7280	Vehmaa	Laittisten kappelinmäki	Medieval	churches and cemeteries	?	excavation 2005, trialexcavation -02	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
8530	Vesilahti	Vesilahden kivisakaristo	Historical	churches and cemeteries	?	excavation -79	
922010003	Vesilahti	Rukoushuone	Iron Age	burial place	cemeteries	excavation -56, inspection, field survey	
924500003	Veteli	Haapajärvi Ruumissaari	Historical	burial place	islet burials	mention	
1000011183	Vieremä	Nissilä	Historical	burial place	massgraves	mention	
925500001	Vieremä	Rotimo Selkäsaari	Historical	burial place	islet burials	mention	
1000011182	Vieremä	Vieremänjärven Ristisaari	Historical	burial place	undetermined	field survey	
927500003	Vihti	Vihtijärvi Mäntysaari	Historical	burial place	undetermined	mention	
927500004	Vihti	Kourlan kartanon hautakammio	Historical	burial place	chamber burials	mention	
8477, 8529	Vihti	Vanha kirkko	Medieval	churches and cemeteries	?	excavation -46, trialexcavation -61	
931500005	Viitasaari	Kolima Rakaja	Historical	burial place	plague cemeteries	mention	
931500003	Viitasaari	Keitele Mustasaari	Historical	burial place	islet burials	mention	
931500006	Viitasaari	Muuruejärvi Ruumissaari	Historical	burial place	islet burials	mention	
1000011335	Virolahti	Kirkonkylä Lintutorni	Historical	burial place	massgraves	mention	
936500002	Virrat	Toisvesi Ruumissaari	Historical	burial place	islet burials	field survey	
936500003	Virrat	Vaskivesi Raatosaari	Historical	burial place	islet burials	mention	
8437	Vyöri-Maksamaa	Vyörin kirkko	Medieval	churches and cemeteries	?	excavation -58	
1000003437	Ylitornio	Raanusaari	Historical	burial place	undetermined	field survey	
1000002286	Ylämaa	Kuikonmäki	Historical	burial place	cemeteries	inspection, field survey	
1000002287	Ylämaa	Vapunkangas	Historical	burial place	cemeteries	field survey	
1000002288	Ylämaa	Ämmänkangas	Historical	burial place	cemeteries	field survey	

Register	Place	Site	Dating	Type	Subtype	Research history	Osteological analysis
1000002289	Ylämaa	Kolikkoinmäki	Historical	burial place	cemeteries	inspection, field survey	
979010006	Yläne	Anivehmaanmäki	Iron Age	burial place	cemeteries	excavation -55,-56,-57, trialex-cavation -54, inspection	
980010024	Ylöjärvi	Mikkola	Iron Age	burial place	cemeteries	excavation -59,-60,-71,-72,-75,-76,-79,-80,-87, inspection, field survey	
303500003	Ylöjärvi	Puntaskylä Puntasjärvi	Historical	burial place	summer burials	mention	
1000003534	Äänekoski	Ryssänhauta	Historical	burial place	massgraves	field survey	
1000003535	Äänekoski	Venäläiskivi	Historical	burial place	massgraves	field survey	
1000003539	Äänekoski	Pirttiniemi	Historical	burial place	massgraves	field survey	

Appendix 2. Context of animal bones in Luistari.

In the following table the graves where animal bones are found are described. The nature of the grave (unfurnished/furnished) is also mentioned in collumn artefacts. The last column has the interpretation of the animal bones, according to Ulla Tupala.

Grave	Animal	Bone	Context	Artefacts	Tupala's interpretation
17	Bos taurus	dentes	filling	yes	not related
18	Bos taurus	tibia	filling	no	not related
20	Bos taurus	dentes	grave	yes	
21	Caprinae sp.	dentes	grave	yes	unclear
24	Equus caballus	ulna	filling	no	not related
33	Bos taurus	dentes	bottom of the gravepit	yes	from grave
35	Canis familiaris	dentes	bottom of the gravepit	yes	from grave
43	Bovidae sp.	dentes	filling	no	not related
43	Caprinae sp.	dentes	filling	no	not related
51	Canis familiaris	dentes	grave	yes	from grave
56?	Bovidae sp.	dentes	topsoil	yes	not related
58?	Bos taurus	dentes	topsoil	yes	not related
68	Bos taurus	dentes	grave	yes	from grave
75	Bos taurus	dentes	grave	yes	from grave
76	Arvicola terristris	cranium and dentes	filling	yes	not related
76	Bos taurus	dentes	grave	yes	from grave
76	Canis familiaris	maxilla and mandible with dentes	grave	yes	from grave
90	Bos taurus	dentes	grave	yes	from grave
97	Caprinae sp.	dentes	grave	yes	unclear
100	Bos taurus	dentes	topsoil	yes	not related
100	Bovidae sp.	dentes	grave	yes	from grave
100	Caprinae sp.	dentes	grave	yes	from grave
109	Bos taurus	scapula	filling	no	not related
112	Sus scrofa	maxilla with dentes	filling	no	not related
114	Caprinae sp.	dentes	filling	no	not related
115	Caprinae sp.	dentes	grave	yes	from grave
130	Caprinae sp.	dentes	grave	yes	from grave
138	Bovidae sp.	dentes	grave? (bottom)	no?	not related
140	Bos taurus	dentes	grave	yes	not related
141	Caprinae sp.	dentes	grave	yes	from grave
145	Bos taurus	dentes	grave	yes	from grave
145	Canis familiaris	dentes	grave	yes	from grave

Grave	Animal	Bone	Context	Artefacts	Tupala's interpretation
150	Canis familiaris	cranium	filling	yes	from grave
150	Canis familiaris	vertebrate, coxae and ossa longa	grave	yes	from grave
157	Caprinae sp.	dentes	grave	yes/no?	from grave
161	Equus caballus	cranium, mandible, humerus	grave	yes/no?	not related
161	Sus scrofa	dentes	grave	yes/no?	?
168 (184?)	Bos taurus	dentes	filling	no	not related
176 (145)	Bovidae sp.	dentes	filling	no	not related
195	Canis familiaris	dentes	grave	yes	from grave
195	Bos taurus	dentes	grave	yes	from grave
196 (195)	Bos taurus	dentes	filling	no	not related
208	Canis familiaris	dentes	grave	yes	from grave
210 (208)	Bos taurus	costae and vertebra	filling	no	not related
216	Equus caballus	femur	filling	no	not related
226	Caprinae sp.	radius	topsoil	yes	not related
227 (226)	Bos taurus	cranium and maxilla with dentes	filling	no	not related
235	Bos taurus	dentes	topsoil	no	not related
235	Bovidae sp.	dentes	filling	no	not related
236	Equus caballus	humerus	topsoil	no	not related
238	Equus caballus	metatarsale	topsoil	no	not related
245	Bos taurus	dentes	filling	no	not related
250 (259)	Bovidae sp.	dentes	filling	no	not related
258	Caprinae sp.	dentes	topsoil	no	not related
259	Bovidae sp.	dentes	topsoil	no	not related
260	Caprinae sp.	several skeletalparts, at least 2 indiv.	filling	no	not related
262	Bos taurus	dentes	filling	no	not related
269	Sus scrofa	dentes	grave	yes	from grave
272	Equus caballus	radius	filling	no	not related
280	Canis familiaris	cranium and dentes	grave	yes	from grave
281	Canis familiaris	cranium, dentes and ossa longa	grave	yes	from grave
282	Bos taurus	dentes	grave	yes	from grave
283	Bos taurus	dentes	grave	yes	from grave
285	Caprinae sp.	dentes	grave	yes	from grave
288	Bos taurus	dentes	grave	yes	unclear
289	Canis familiaris	cranium and mandible with dentes	grave	yes	from grave
291	Caprinae sp.	dentes	grave	yes	from grave
304	Bos taurus	dentes	grave	yes	unclear
305	Bovidae sp.	dentes	grave	yes	unclear
307	Caprinae sp.	dentes	filling	no	not related

Grave	Animal	Bone	Context	Artefacts	Tupala's interpretation
310	Caprinae sp.	dentes	filling	no	not related
310	Bos taurus	dentes	filling	no	not related
315	Caprinae sp.	dentes	grave	yes	unclear
318	Bos taurus	dentes	grave	yes	?
318	Canis familiaris	mandible and dentes	grave	yes	from grave
319	Bovidae sp.	dentes	grave	yes	from grave
325	Bos taurus	dentes	grave	yes	from grave
327	Caprinae sp.	dentes	grave	yes/no?	unclear
329	Bos taurus	dentes	grave	yes	unclear
330	Bos taurus	dentes	grave	yes	from grave
338	Bos taurus	dentes	grave	yes	from grave
344	Bovidae sp.	dentes	grave	yes	from grave
345	Canis familiaris	dentes	grave	yes	from grave
353	Bos taurus	mandible and dentes	grave	yes	not related
359	Canis familiaris	dentes	grave	yes	from grave
366	Caprinae sp.	dentes	topsoil	yes	unclear
381 (413)	Bos taurus	dentes	grave	yes	not related
393 (394)	Caprinae sp.	dentes	filling	no	not related
393 (394)	Bovidae sp.	dentes	filling	no	?
400	Bos taurus	dentes	grave	yes	from grave
421	Caprinae sp.	dentes	grave	yes	not related

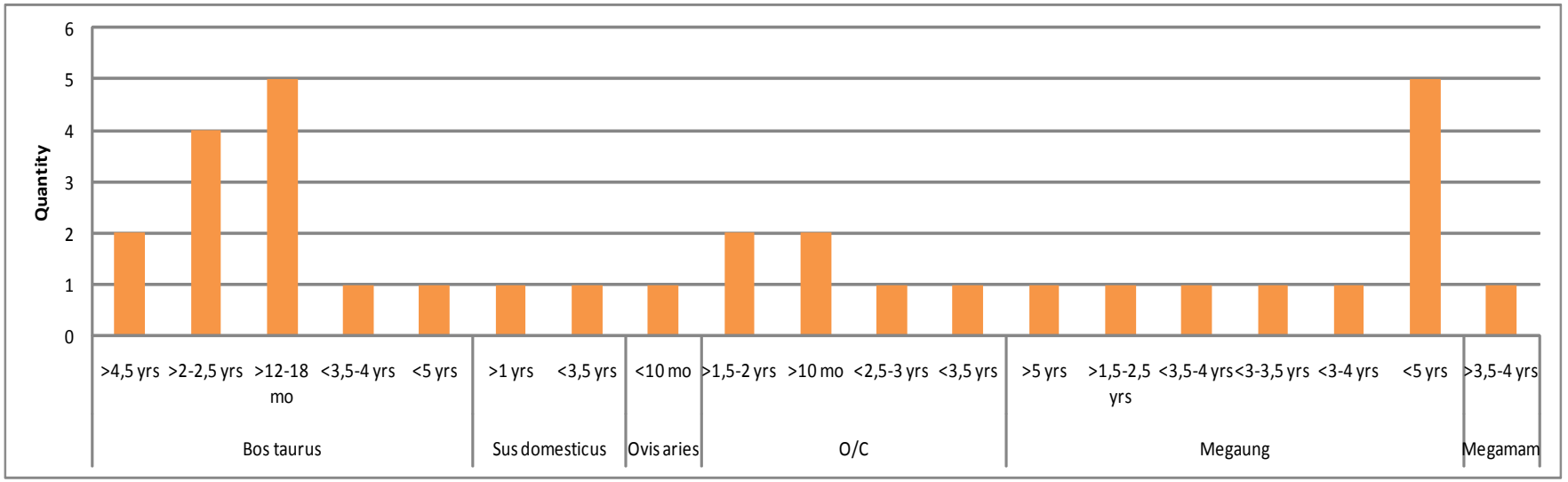


Figure 9. The age estimations from mammal long bones on the site of the church of the Holy Spirit.

Table 4. The quantity of animals in graves according to areas 9-13 in the excavation of the church of the Holy Spirit.

Grave	1	2	3	5	6	7	8	9	10	11	13	15	17	18	21	22	23	24	26	28	29	32	33	34	35	36	37	38	39	40	43	47	49	51	56	57	58	59	60	61	62	66	71	72	75	24-25	Total
Area 10																																																
Bos taurus	1		1			1	2	1	1	4	1	3		1			1		2			2	1	1	1				1	1	2		1	1	1				1	1			1	2			**36**
Sus domesticus	2		1	1							1												1																1					1			**8**
Ovis aries		1				1			1																																						**3**
Capra hircus						1																																									**1**
O/C	1		3						2		1		1			2			1			1	1			1	1			1							2				2	1	1	3			**25**
Lepus timidus			1																1																											**2**
Bovidae																														1																	**1**
Carnivora																														1																	**1**
Megaung	2	6	2		1	5	2	2	4			1			1	2	2		1			1							2		1				1			1	1			1	5	1		**45**
Mesoung									1		2																			1	1															**5**
Megamam	1		1													2	2		4			1	3	1			5		2							1		2	1			1		4	1	**32**
Mammalia	6		5			2				3	3	1	2			4	3	1	3	1	3	2	2	4	1					1		2			2	1	1			1			1	4	4	2	**65**
Galliformes sp.																												1																			**1**
Aves sp.																			1																											**1**
Esox lucius																																1															**1**
Percidae																																		1													**1**
indet.																					2						1																			**3**
Area 11																																															
Bos taurus	5																																														**5**
Sus domesticus										1																																						**1**
O/C	1																																														**1**
Megaung	1																																														**1**
Mammalia	5																																														**5**
Total	**25**	**7**	**14**	**1**	**1**	**10**	**4**	**3**	**9**	**8**	**8**	**5**	**3**	**1**	**1**	**10**	**8**	**1**	**13**	**1**	**5**	**7**	**8**	**6**	**2**	**1**	**7**	**1**	**5**	**5**	**5**	**3**	**1**	**2**	**4**	**1**	**4**	**1**	**5**	**3**	**2**	**1**	**5**	**15**	**9**	**3**	**244**

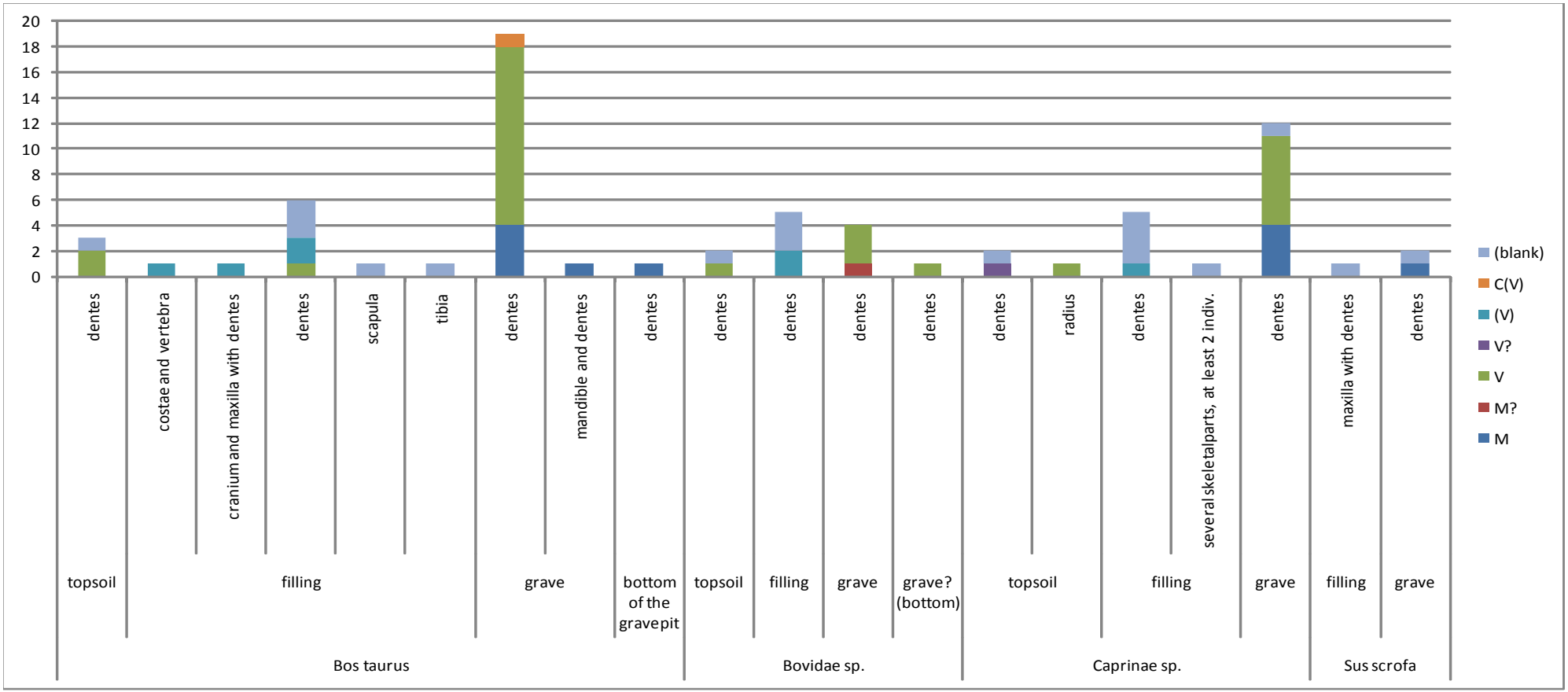
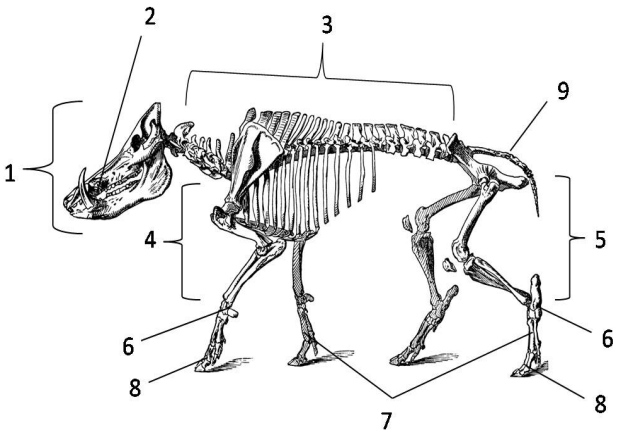


Figure 21. Shows the number of animal bones in different contexts. The colouring and letter refers to time periods. M=Merovingian period, M?=possible Merovingian period, V=Viking Age, V?=possible Viking Age, (V)=bones could derive from Viking Age, C(V)=Crusade period but could come also from Viking Age, blank=unfurnished grave (possibly Christian).

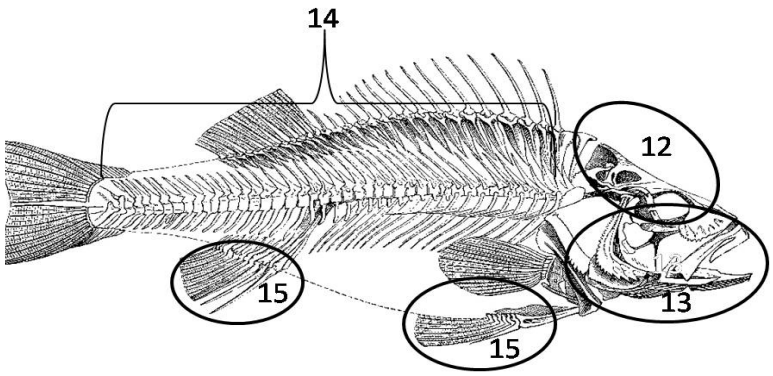
Appendix 4. Key for anatomical representation

Mammal bones are divided into sections according to the purpose of use as food in a following way:



1 skull (including mandible)
2 teeth
3 vertebrate and thorax
4 front limbs and shoulder area
5 hind limbs and hip area
6 wrist and ankle
7 metacarpals and –tarsals (metapods)
8 phalanx (hooves)
9 tale bone
10 horns
11 long bones
0 unidentified

Fishbones differ from mammal and bird bones significantly. The anatomy is divided in a following way:



12 neorocranium,
13 viceralcranium,
14 vertebrate
15 fins
16 scales
0 unidentified